Order NO.ITD0509057BE

Service Hints

Plasma Television

VIERA

<500/50 Series> TH-50/42/37PV500E
TH-50/42/37PV500B
TH-42/37PA50E
TH-42/37PE50B

Trouble Shooting for Power Supply - Ver 2.0 -

This service hint is published for technicians and engineers for repair.

And it gives you the information how to judge the defective board of PDP.

Please file and use this Service Hints together with the main service manual and other publications related to models.

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

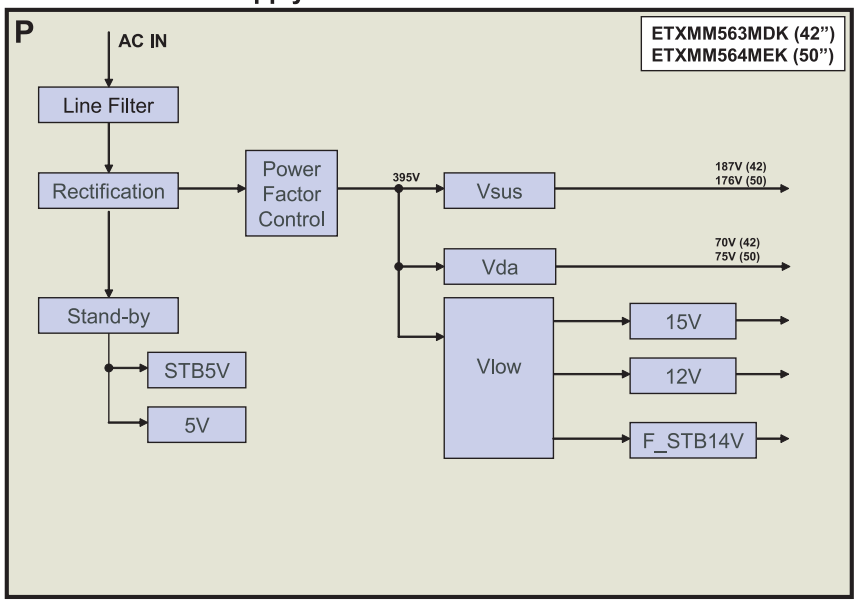
Panasonic

- CONTENTS -

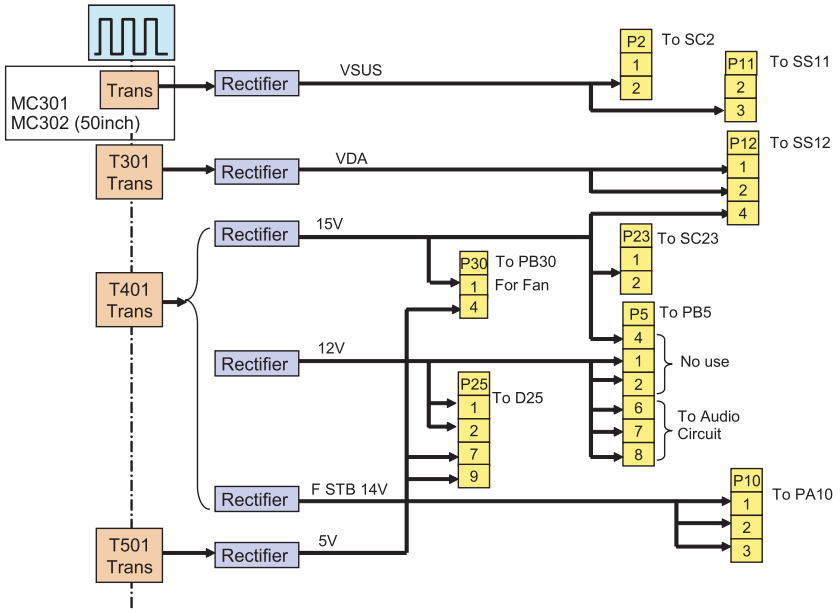
Power Supply

<TH-50/42PV500E>
<TH-50/42PV500B>

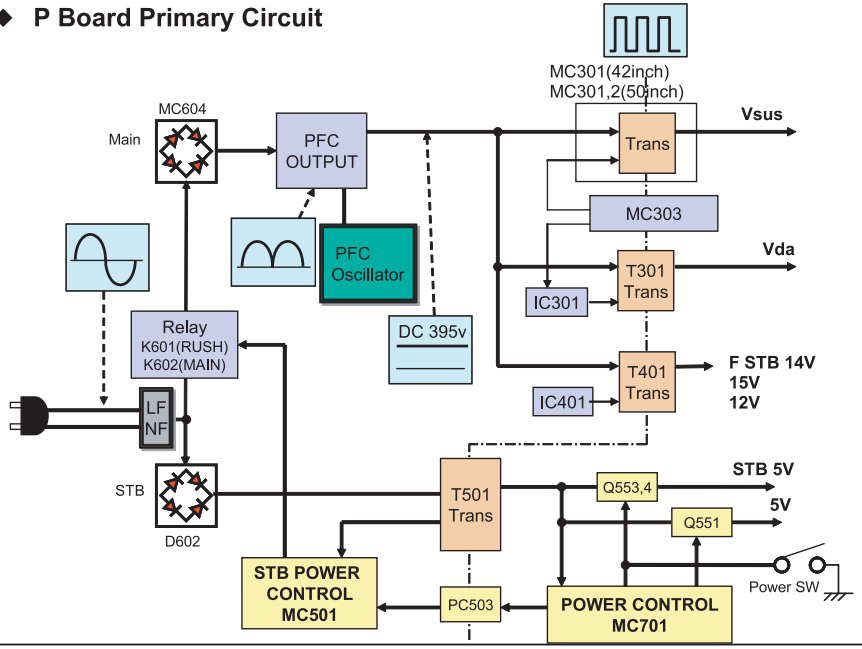
◆ P Board Power Supply Outline



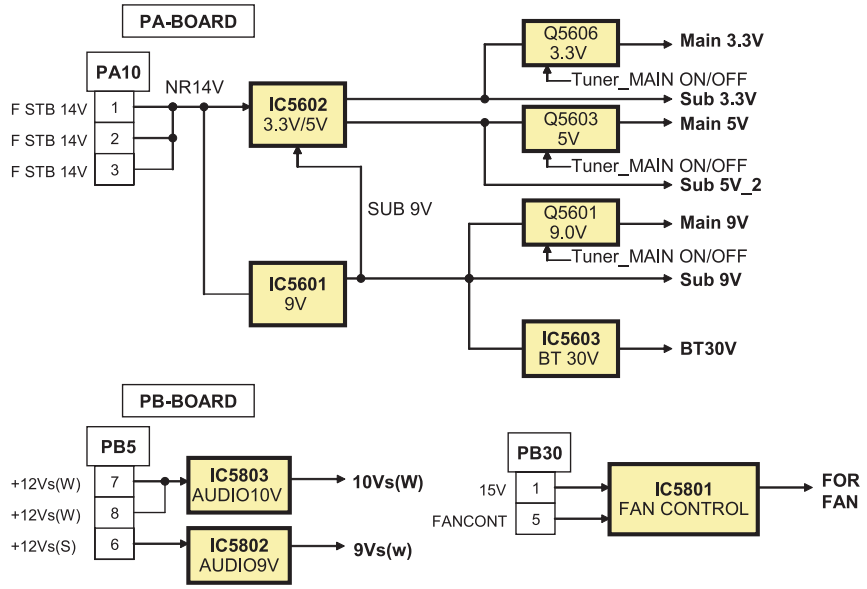
◆ P Board Secondary Circuit



◆ P Board Primary Circuit



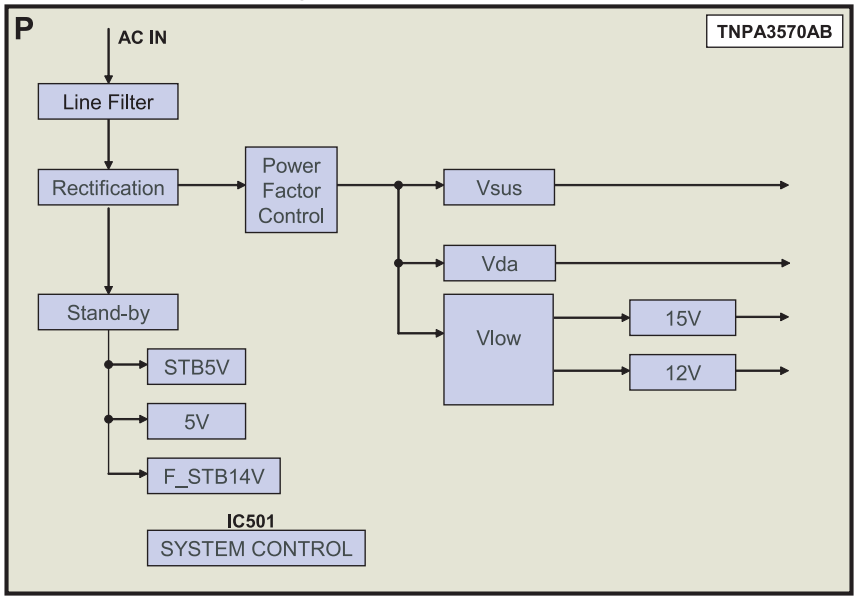
◆ PA&PB Board Regulator Circuit



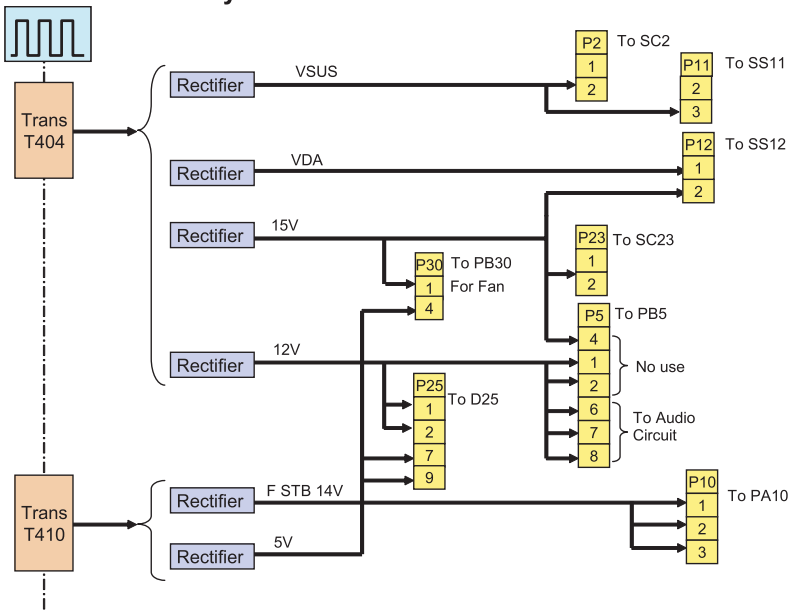
Power Supply

<TH-37/42PA50E> <TH-37PV500E>
<TH-37/42PE50B> <TH-37PV500B>

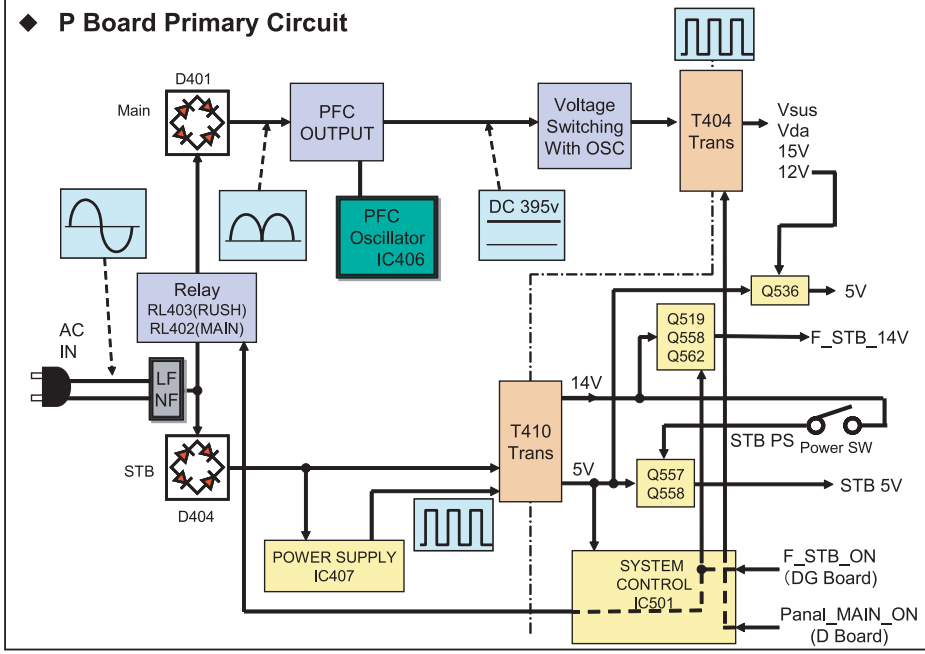
◆ P Board Power Supply Outline



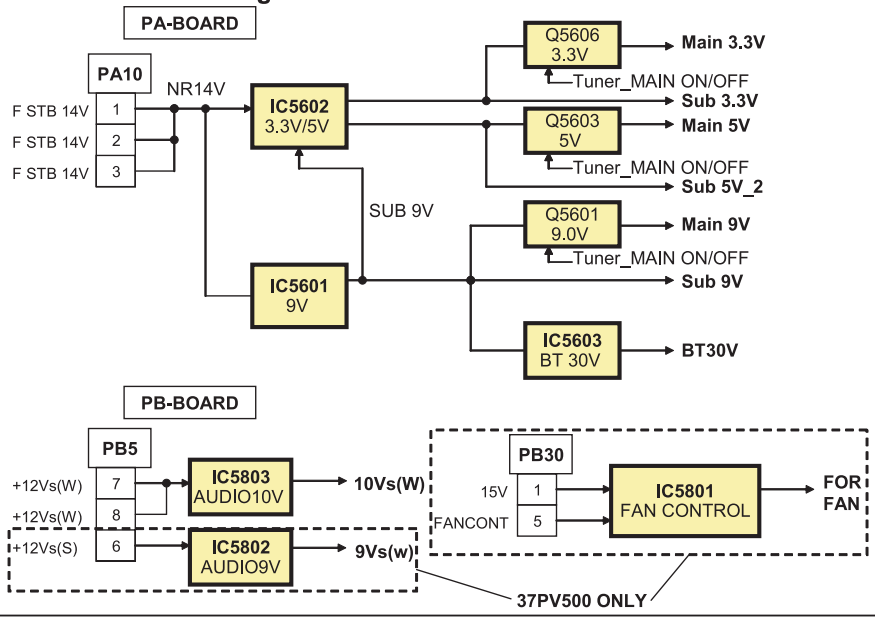
◆ P Board Secondary Circuit



◆ P Board Primary Circuit



◆ PA&PB Board Regulator Circuit

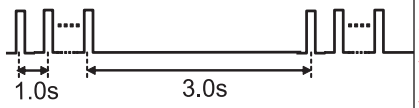


Protection — Protection Circuit Operation

◆ Power LED Blink Mode

LED Blinking times		Trouble Mode	Defective Board (Example)		
1st (*1)	improved		37/42PA50E,PE50B	37/42PV500E,B	50PV500E,B
1	1	IIC communication NG	Unknown (D)		
	2	12V down SOS	P, D		
	3	3.3V down SOS	D		
	4	Power SOS (Vsus, 5V down)	P		
	5	P5V SOS	D, P, C, SC, SS, Panel (IC)		
	6	SCAN Driver SOS(37",42") +SC Floating Volt. (50")	SC, SS, D, P (SC Energy recovery)	SC, SU, SD, SS, D, P (SC Energy recovery/ floating volt.)	
	7	SC Floating Volt.(37",42") DATA Driver SOS (50")	SC, SU, SD, D, P (SC floating volt.)	SS, D, C, P (SS Data Energy recovery)	
	8	SUS Driver SOS	SS, SC, D, P (SS Energy recovery)		
	9	Soft-Ver. Combination NG	D		
10		Tuner Power SOS	PA, P, H, DG, Z, TA, XV(*2)	PA, P, H, DG, GS, Z, TA, DV, XV(*2)	
11		Fan SOS		PB, FAN	
12		Sound SOS	PB, Z, H		

LED Blinking signal



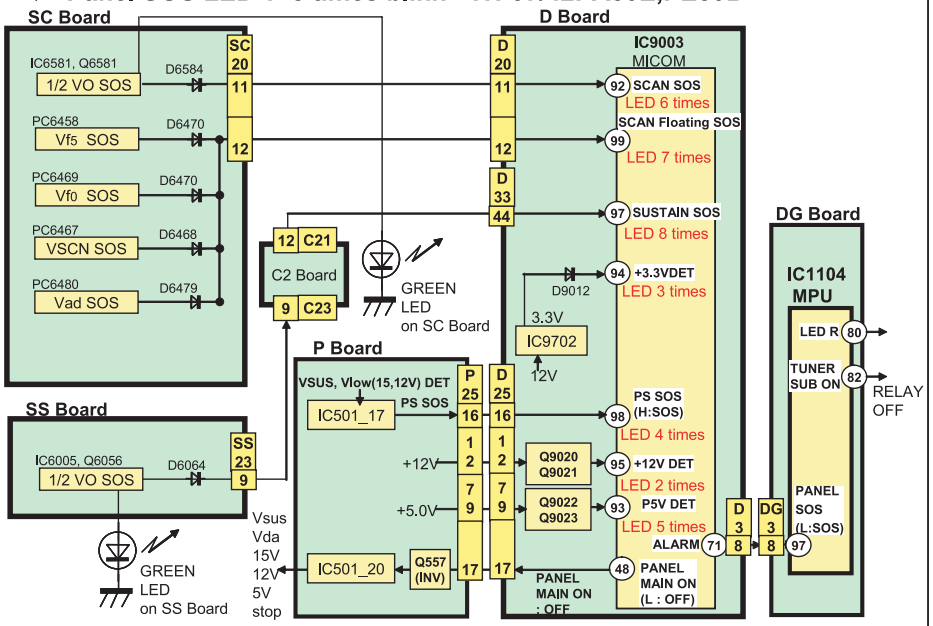
Note
(*1)
2 ~ 9 times LED blinking become to 1 time in 1st design.
So, when 1 time LED Blinking is found, please check SOS signal that is input to IC9003, in order to know true LED blinking time.
Check point is the connector's pin or IC9003's pin as shown in the following table.
When SOS signal is found, please refer to the flow chart of its trouble mode that the SOS signal indicates.

(*2)
XV board PE50B, PV500B only.

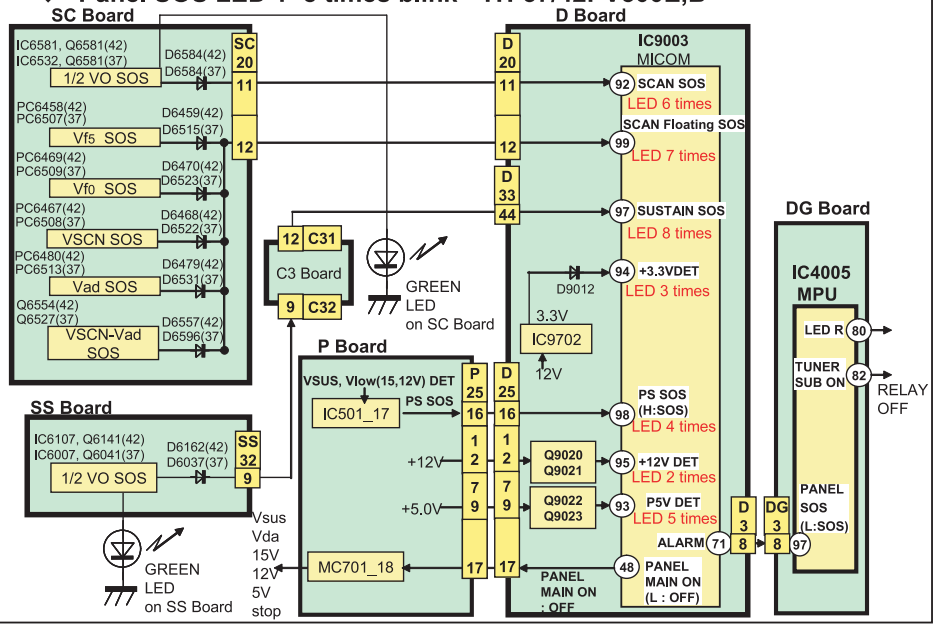
◆ Check point in the case of 1 time blink

LED Blinking		Trouble Mode	Check Point location		Check output
actual	true		connector No. / Pin No.	IC9003 (D board) input port No.	SOS signal
1	2	12V down SOS	---- (R9047 in D board)	IC9003_95	L : SOS
	3	3.3V down SOS	---- (R9007 in D board)	IC9003_94	L : SOS
	4	Power SOS	D25 or P25 / 16pin	IC9003_98	H : SOS
	5	P5V SOS	---- (R9048 in D board)	IC9003_93	L : SOS
	6	SCAN Driver SOS(37",42") +SC Floating Volt. (50")	D20 or SC20 / 11pin	IC9003_92	H : SOS
	7	SC Floating Volt.(37",42") DATA Driver SOS (50")	D20 or SC20 / 12pin (37"/42") SS44 or C44 / 19pin (50")	IC9003_99	H : SOS
	8	SUS Driver SOS	SS23 or C23 / 9 pin (37") SS32 or C32 / 9 pin (42") SS44 or C44 / 9 pin (50")	IC9003_97	H : SOS

◆ Panel SOS LED 1~8 times blink <TH-37/42PA50E,PE50B>

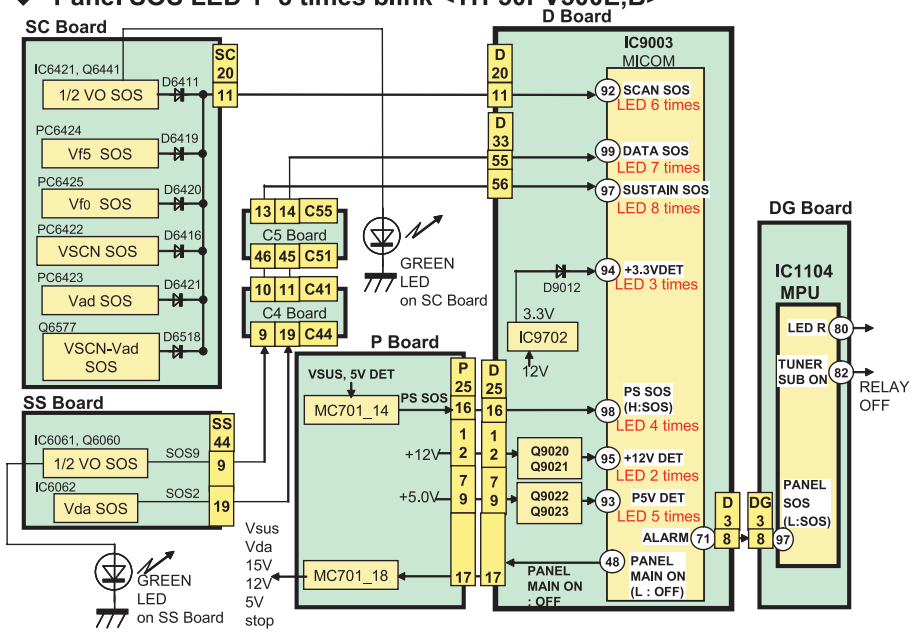


◆ Panel SOS LED 1~8 times blink <TH-37/42PV500E,B>

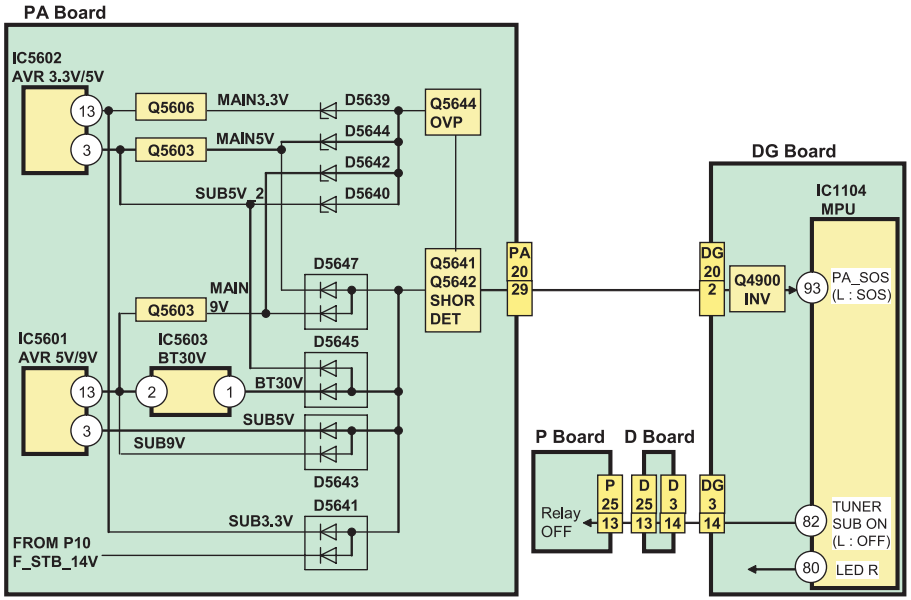


Protection Circuit Operation

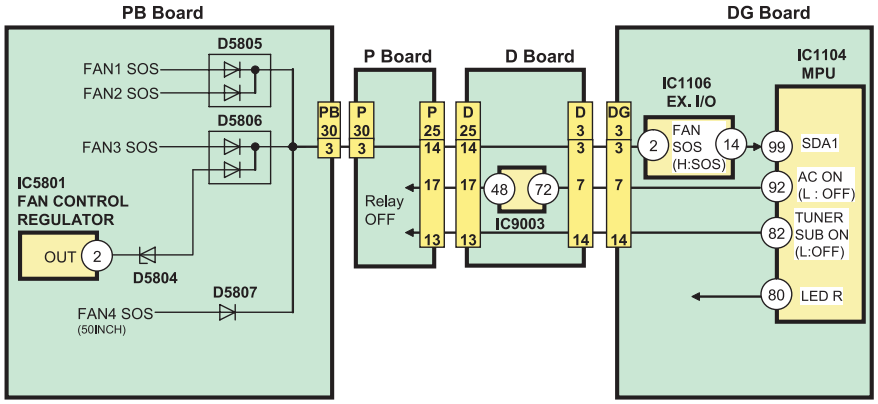
◆ Panel SOS LED 1~8 times blink <TH-50PV500E,B>



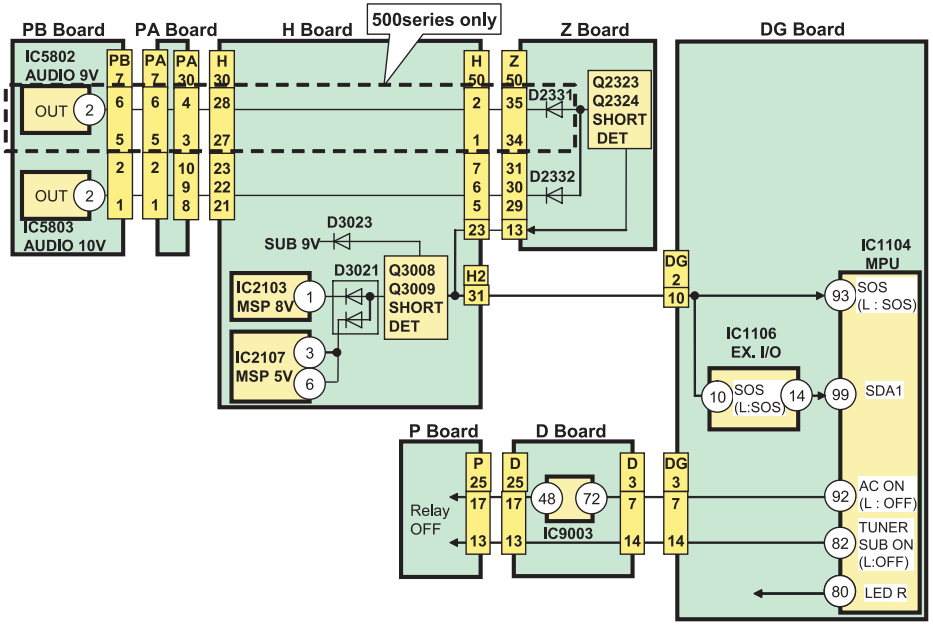
◆ Tuner SOS LED 10 times blink



◆ FAN SOS LED 11 times blink



◆ Sound SOS LED 12 times blink



Introduction of Power Trouble Shooting

1. These are following 2 states of Power LED in Power Trouble

A. No Lit (Relay doesn't work)

B. Blinking several times

2. Basic Idea of how to find the defective block

A. Check if the voltage comes up

Normally, when Power ON, shut down occurs immediately.
So, check is necessary before shutdown.

B. Check if power comes up, when disconnecting the board which seems to be defective.

If power comes up (*) when disconnecting a board,
the board is defective.

(*) "Power comes up" means "no shutdown".

3. Adjustment after P.C.B. exchange

When exchange the following boards, voltage adjustment is necessary.
Please refer to Service Manual.

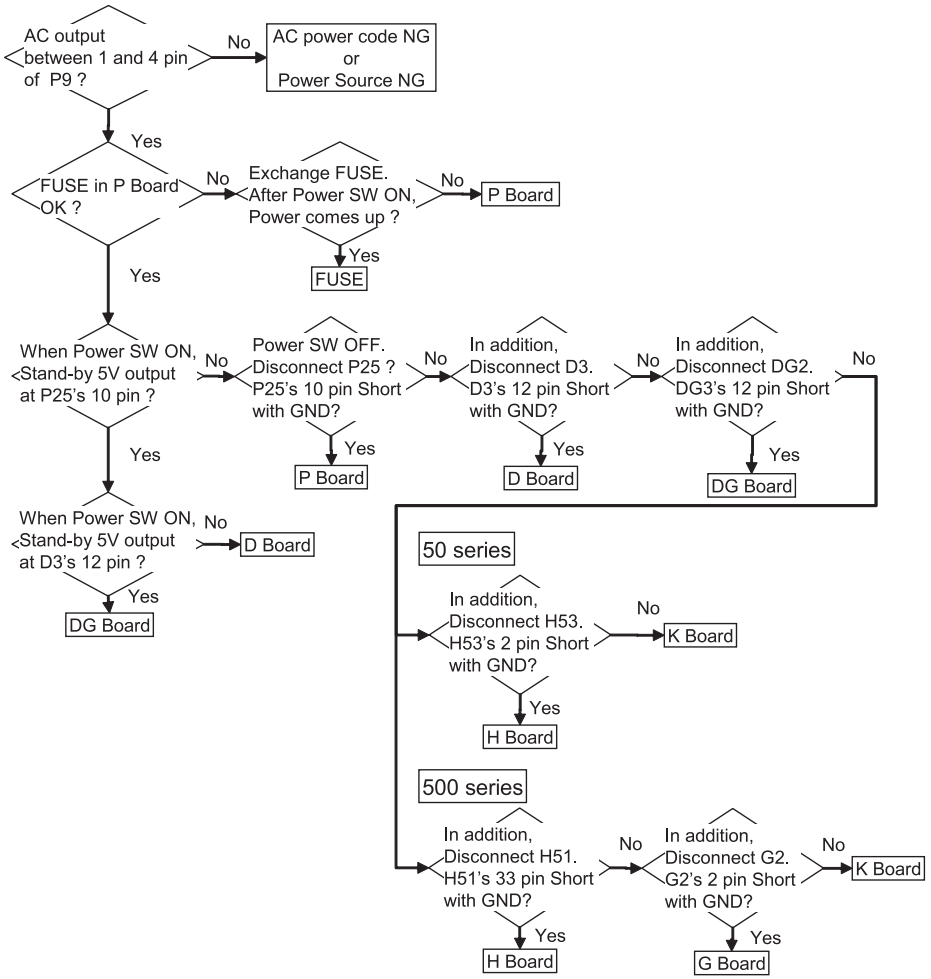
P.C.B	Voltage
P board	Vsus
SC board	Vad
SS board	Ve

Trouble Shooting — Power LED No Lit Trouble

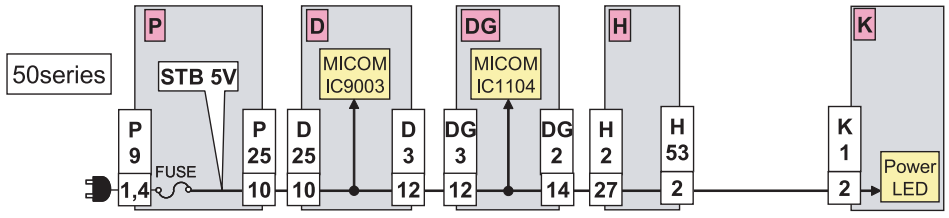
◆ Trouble status and Defective Block

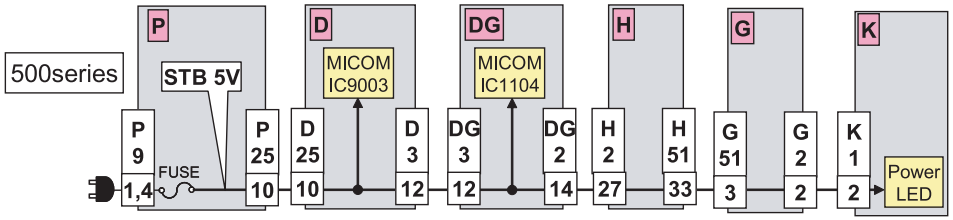
Power LED Status (cause)	Defective Block
No Lit (STB 5V NG)	AC Power Code or P Board (or other Boards)

◆ How to find the defective board

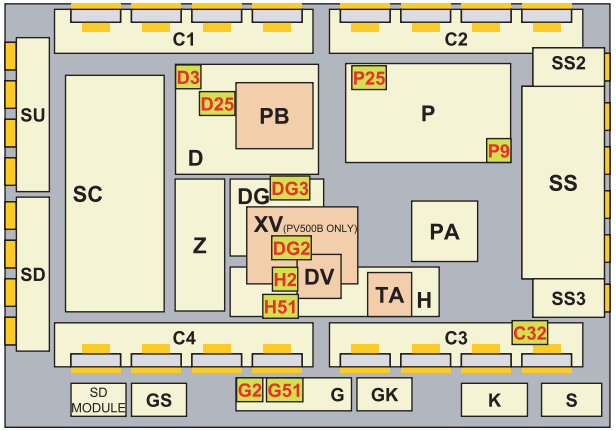


◆ STB 5V Power Supply





◆ Check Point Location e.g. 42PV500E,B



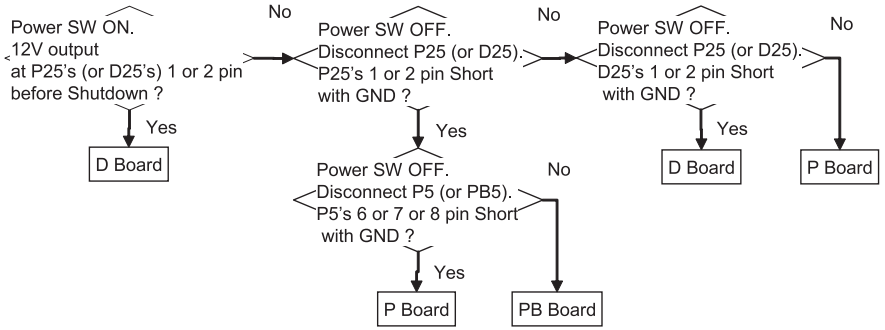
Trouble Shooting | Power LED Blink Trouble

LED 2 times blink

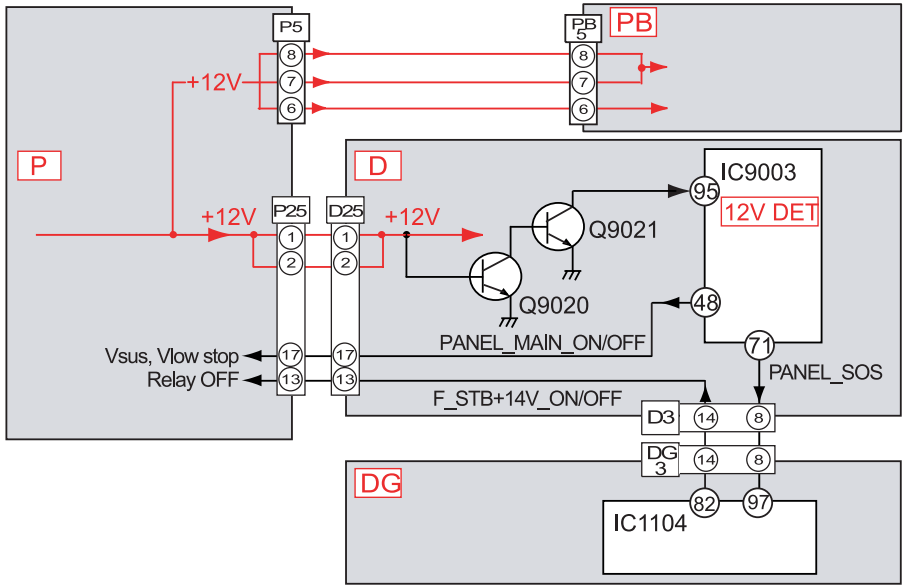
◆ Trouble Mode and Defective Board

Trouble Mode	Defective Board (Possibility)
12V down SOS	P, D, PB Board (P > D, PB)

◆ How to find the defective board



◆ Power Supply and Protection Circuit



LED 3 times blink

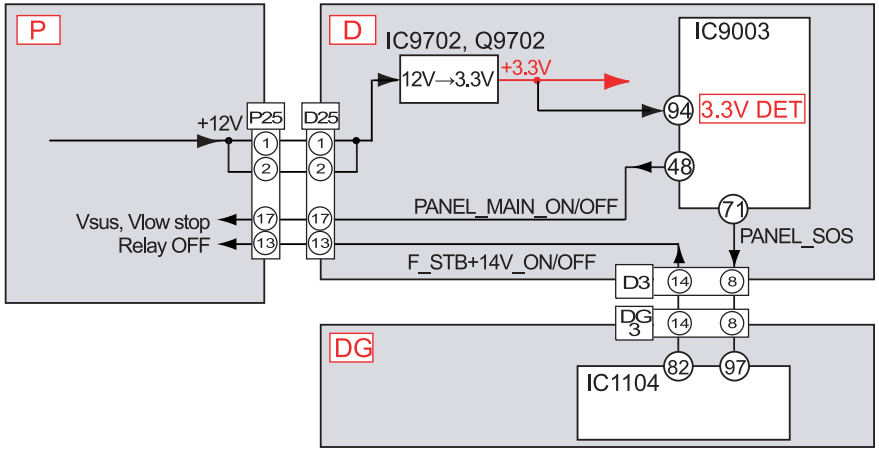
◆ Trouble Mode and Defective Board

Trouble Mode	Defective Board
3.3V down SOS	D Board

◆ How to find the defective board

The defective board is D board ONLY.

◆ Power Supply and Protection Circuit



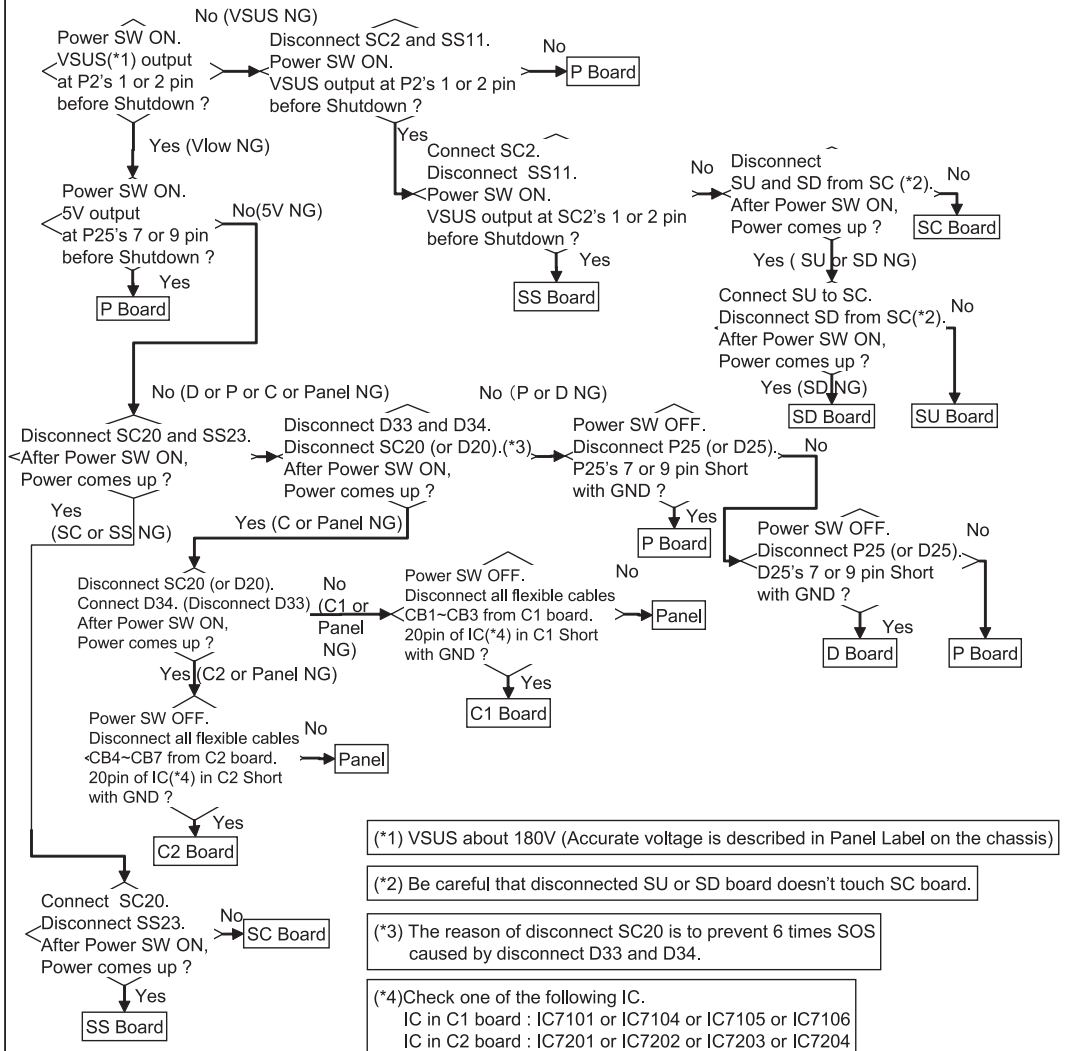
Trouble Shooting | Power LED Blink Trouble

LED 4 times blink < 37",42" SD (TH-37/42PA50E,PE50B) >

◆ Trouble Mode and Defective Board

Trouble Mode	Defective Board (Possibility)
Power SOS =Vsus, 5V down	P , SC, SS, D, SC,SU Board (P > SC, SS, D, SU, SD)

◆ How to find the defective board



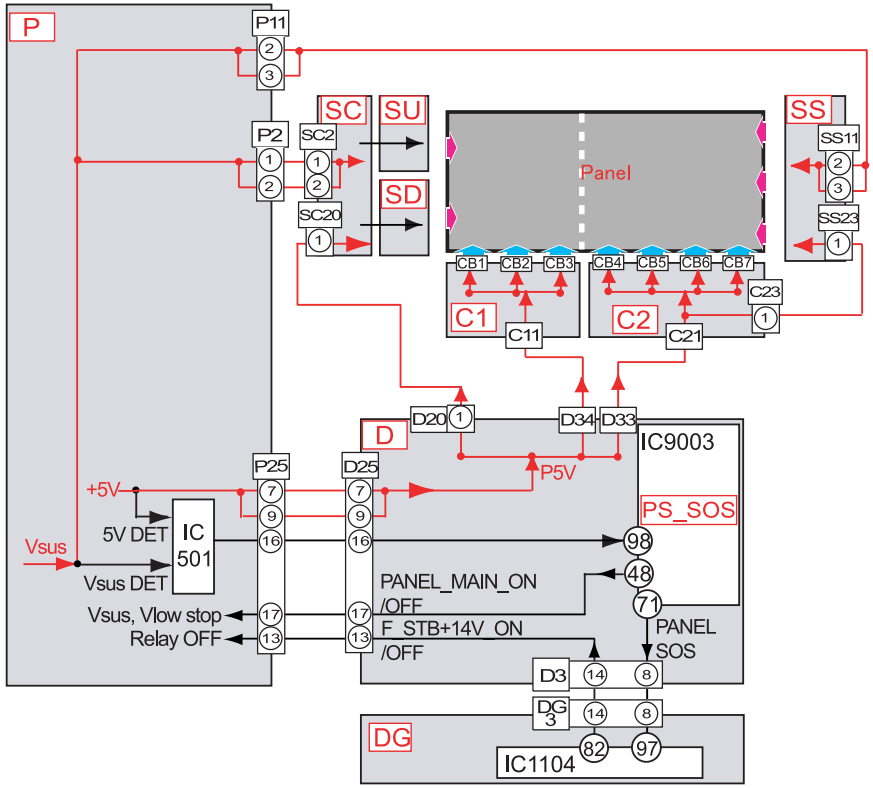
(*1) VSUS about 180V (Accurate voltage is described in Panel Label on the chassis)

(*2) Be careful that disconnected SU or SD board doesn't touch SC board.

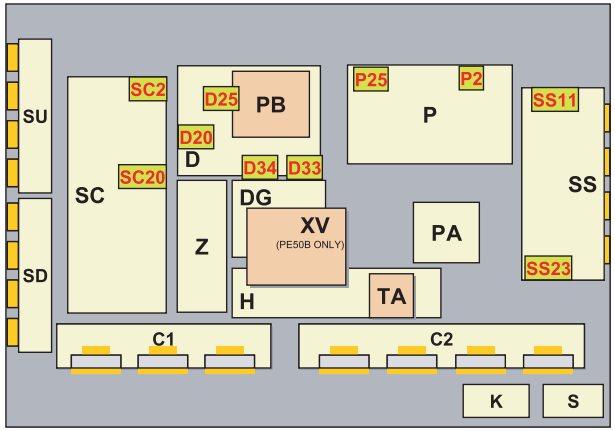
(*3) The reason of disconnect SC20 is to prevent 6 times SOS caused by disconnect D33 and D34.

(*4)Check one of the following IC.
IC in C1 board : IC7101 or IC7104 or IC7105 or IC7106
IC in C2 board : IC7201 or IC7202 or IC7203 or IC7204

◆ Power Supply and Protection Circuit



◆ Check Point Location



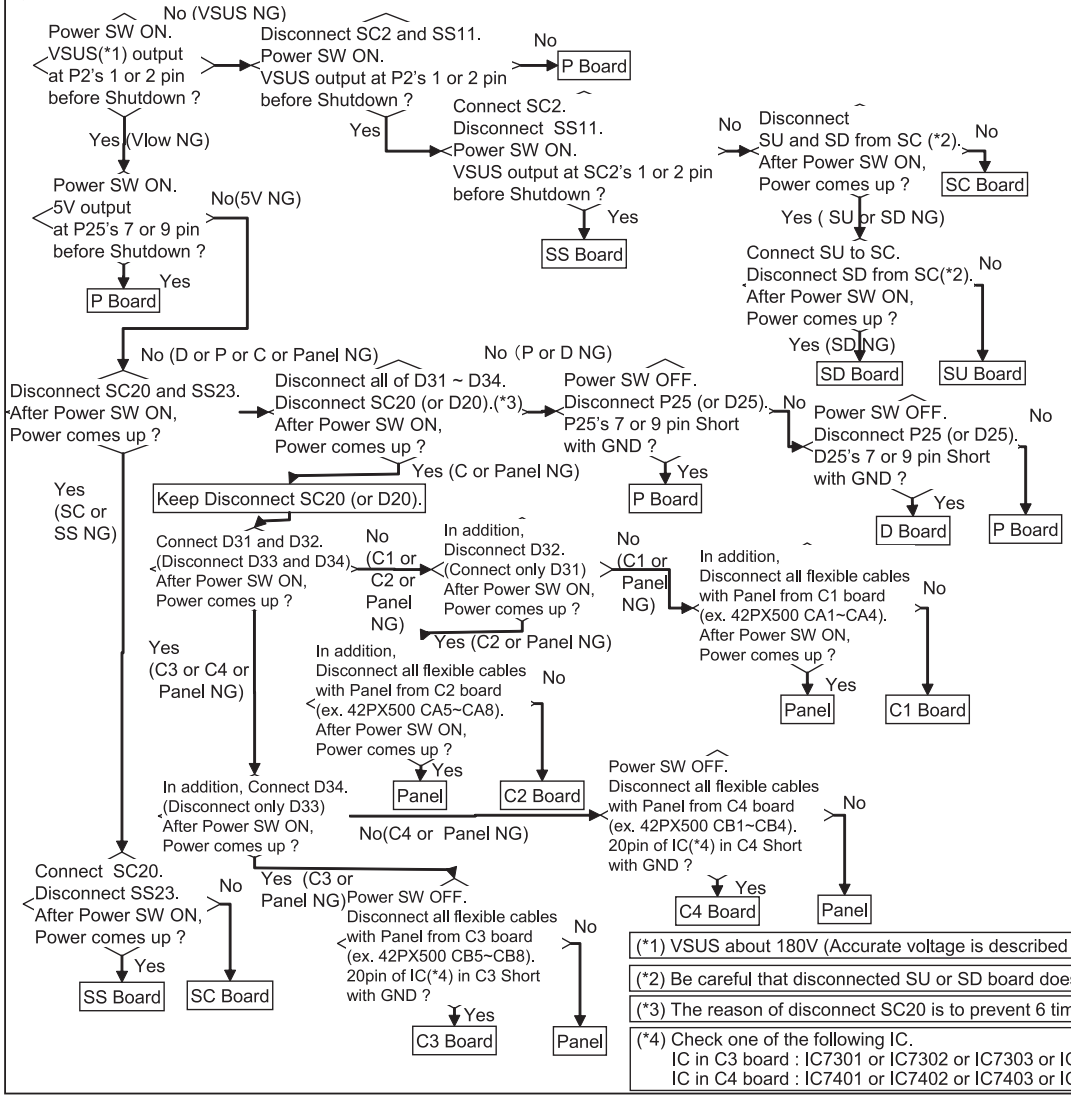
Trouble Shooting — Power LED Blink Trouble

LED 4 times blink < 37", 42" HD (37/42PV500E,B)>

◆ Trouble Mode and Defective Board

Trouble Mode	Defective Board (Possibility)
Power SOS =Vsus, 5V down	P , SC, SS, D, SC,SU Board (P > SC, SS, D, SU, SD)

◆ How to find the defective board



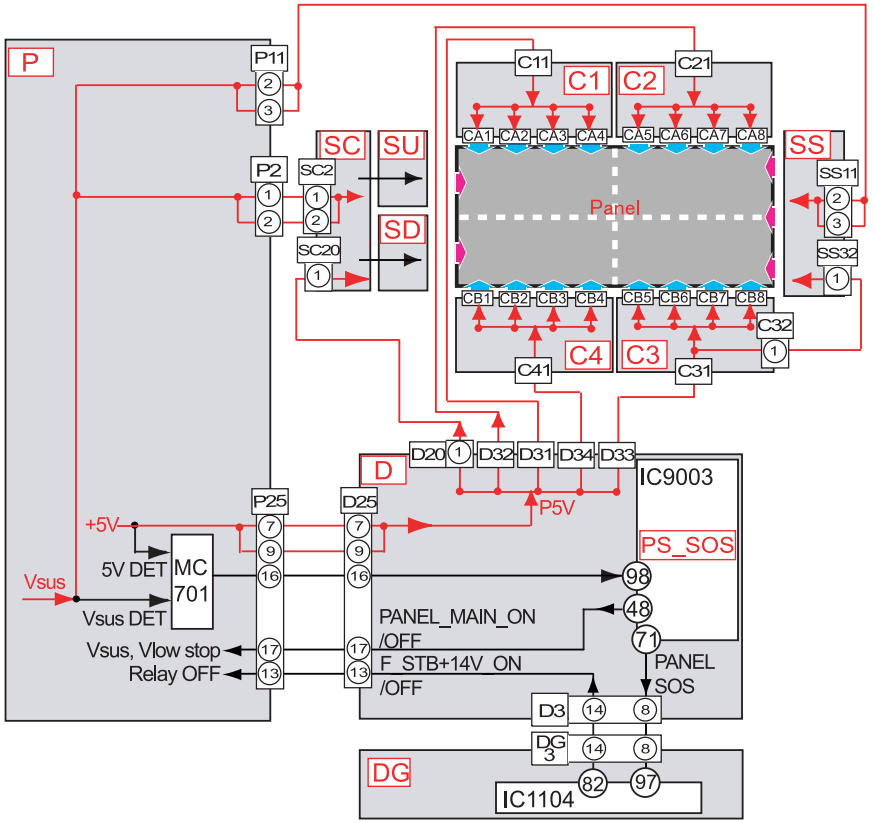
(*1) VSUS about 180V (Accurate voltage is described in Panel Label on the chassis)

(*2) Be careful that disconnected SU or SD board doesn't touch SC board.

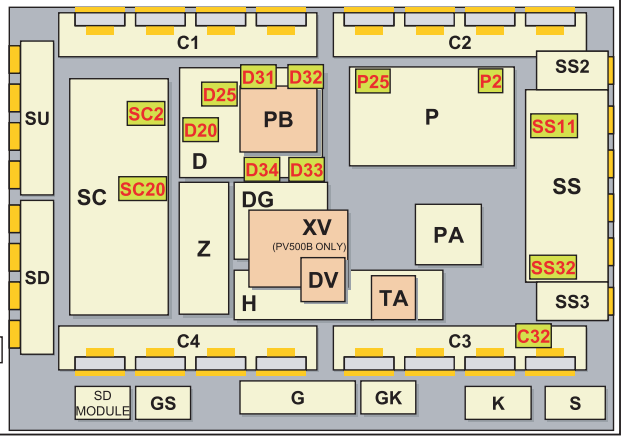
(*3) The reason of disconnect SC20 is to prevent 6 times SOS caused by disconnect D31~D34.

(*4) Check one of the following IC.
IC in C3 board : IC7301 or IC7302 or IC7303 or IC7304
IC in C4 board : IC7401 or IC7402 or IC7403 or IC7404

◆ Power Supply and Protection Circuit e.g. 42PV500E,B



◆ Check Point Location e.g. 42PV500E,B



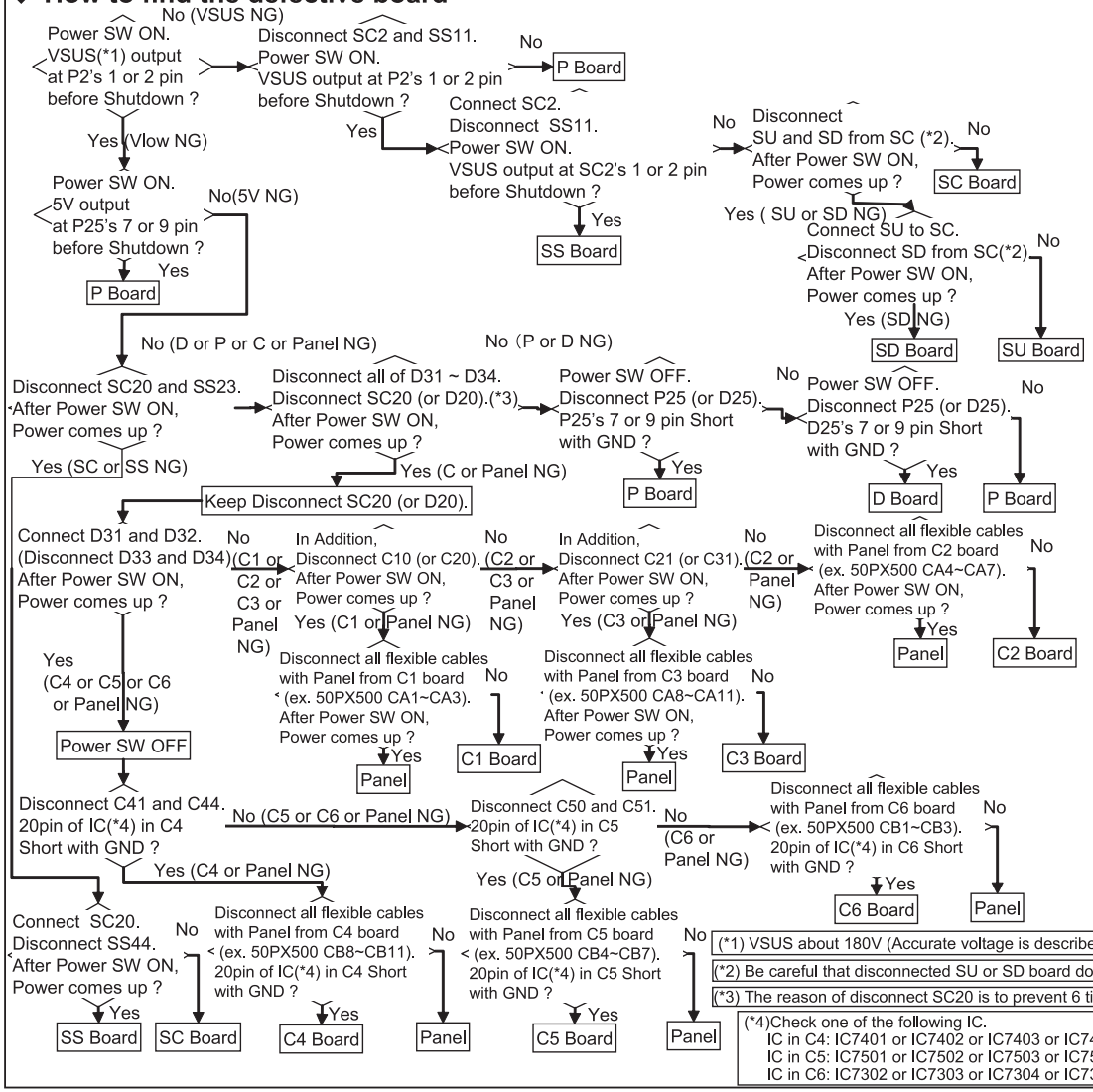
Trouble Shooting | Power LED Blink Trouble

LED 4 times blink < 50" HD (TH-50PV500E,B) >

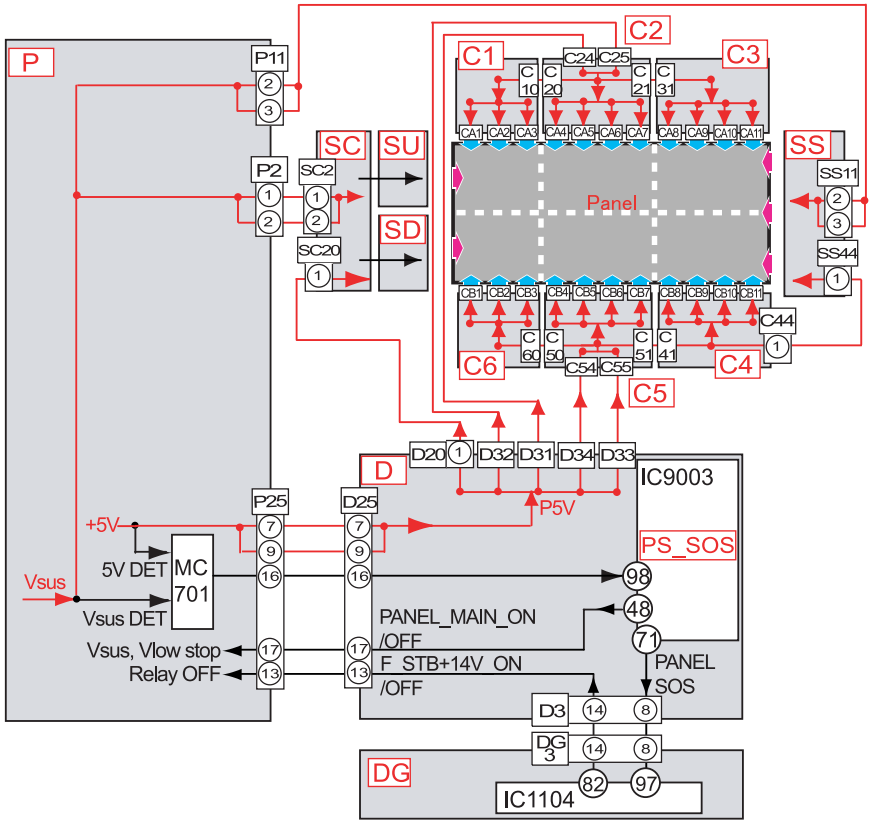
◆ Trouble Mode and Defective Board

Trouble Mode	Defective Board (Possibility)
Power SOS =Vsus, 5V down	P , SC, SS, D, SC,SU Board (P > SC, SS, D, SU, SD)

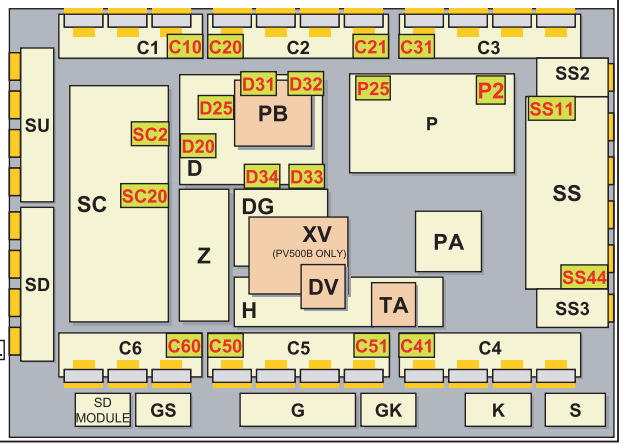
◆ How to find the defective board



◆ Power Supply and Protection Circuit



◆ Check Point Location



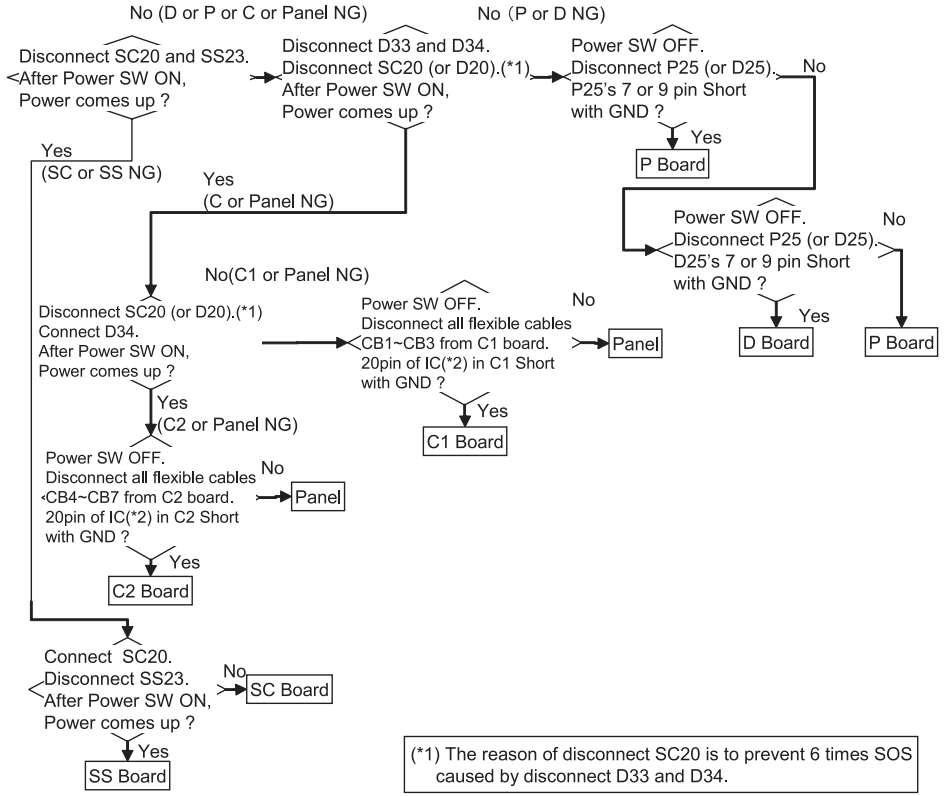
Trouble Shooting　Power LED Blink Trouble

LED 5 times blink　< 37”,42” SD (TH-37/42PA50E,PE50B) >

◆ Trouble Mode and Defective Board

Trouble Mode	Defective Board
P5V SOS	D, P, C, SC, SS Board, Panel (IC)

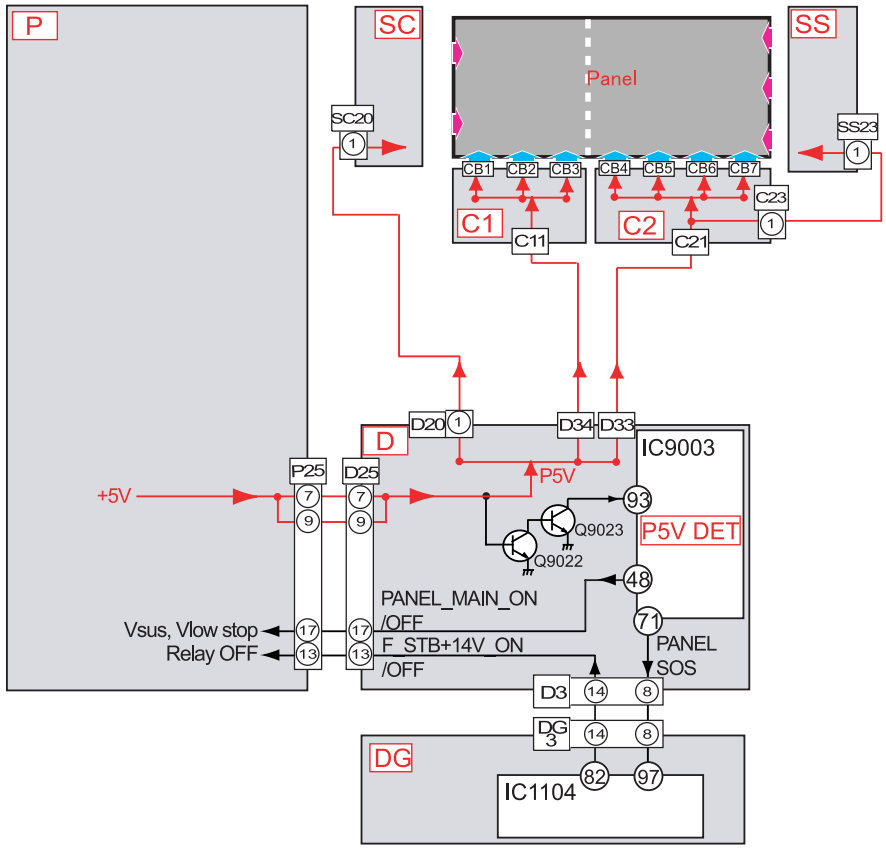
◆ How to find the defective board



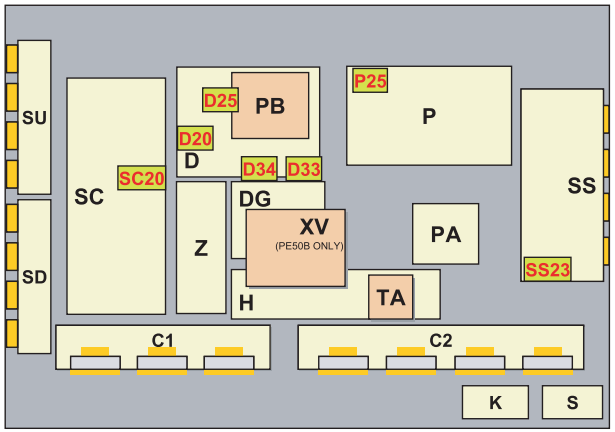
(*1) The reason of disconnect SC20 is to prevent 6 times SOS caused by disconnect D33 and D34.

(*2)Check one of the following IC.
IC in C1 board : IC7101 or IC7104 or IC7105 or IC7106
IC in C2 board : IC7201 or IC7202 or IC7203 or IC7204

◆ Power Supply and Protection Circuit



◆ Check Point Location



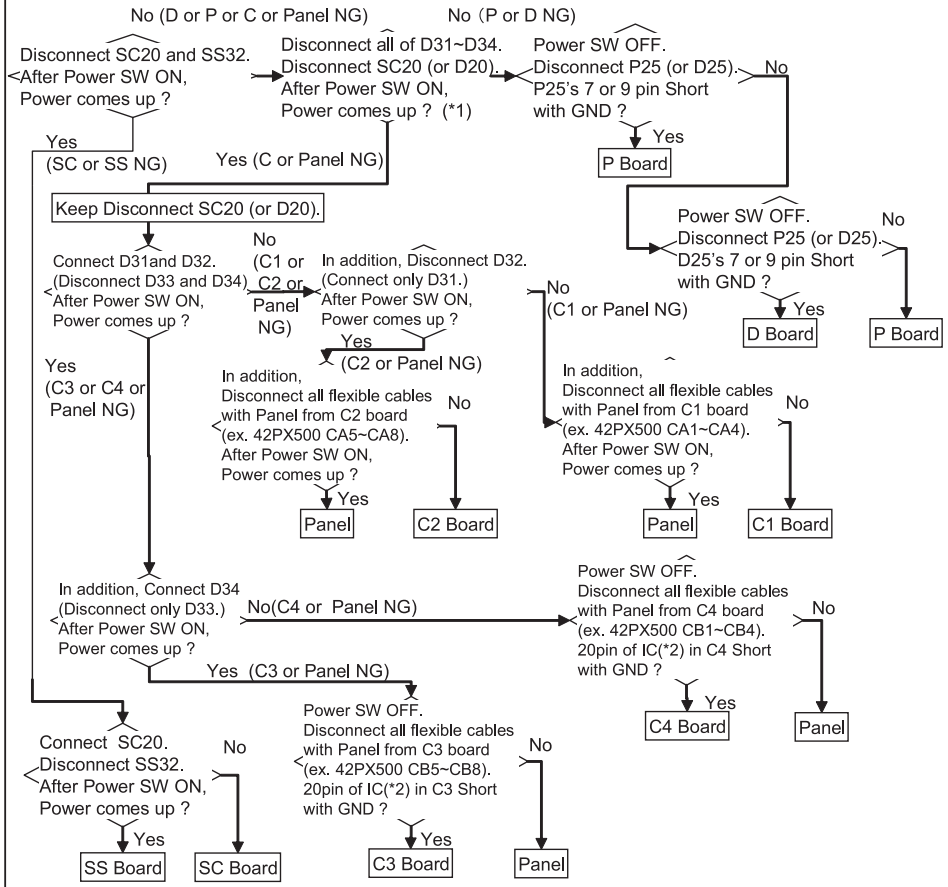
Trouble Shooting Power LED Blink Trouble

LED 5 times blink < 37”, 42” HD (37/42PV500E,B)>

◆ Trouble Mode and Defective Board

Trouble Mode	Defective Board
P5V SOS	D, P, C, SC, SS Board, Panel (IC)

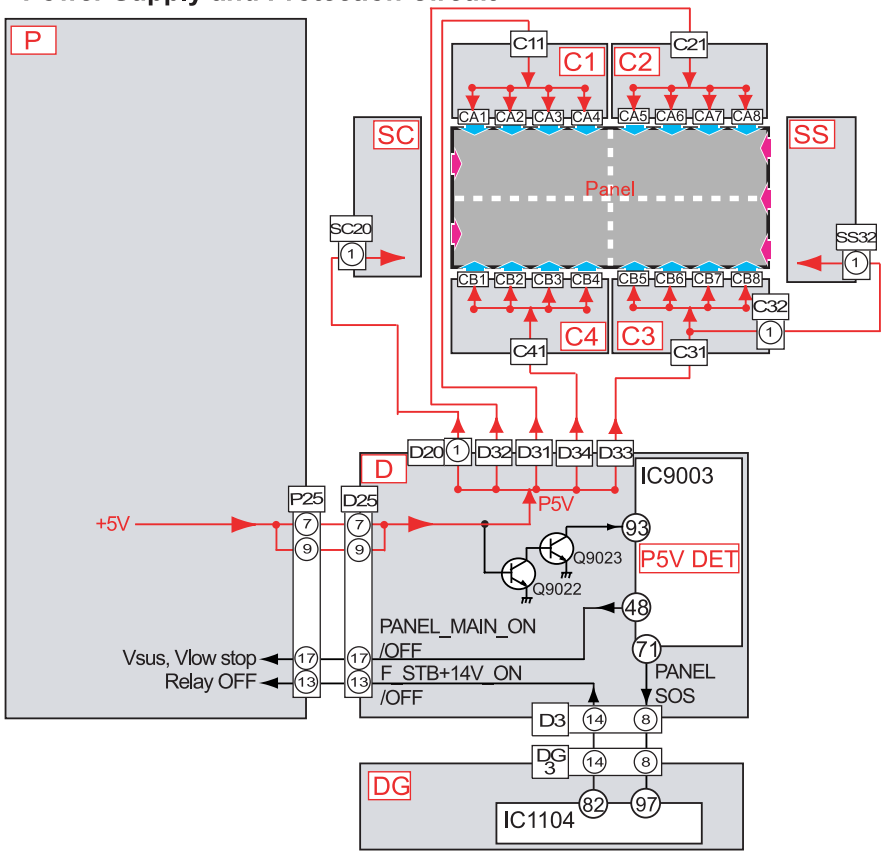
◆ How to find the defective board



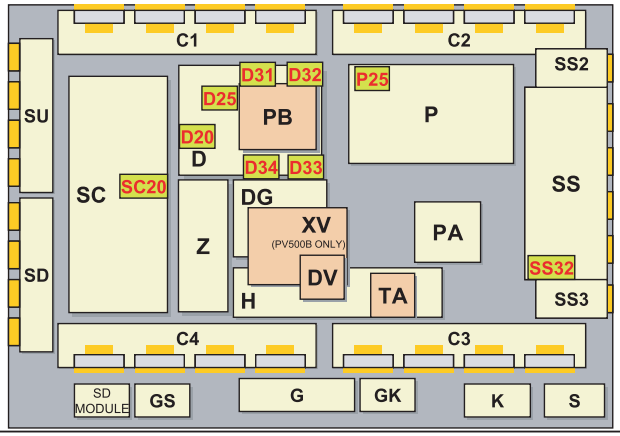
(*1) The reason of disconnect SC20 is to prevent 6 times SOS caused by disconnect D31~D34.

(*2) Check one of the following IC.
IC in C3 board : IC7301 or IC7302 or IC7303 or IC7304
IC in C4 board : IC7401 or IC7402 or IC7403 or IC7404

◆ Power Supply and Protection Circuit



◆ Check Point Location



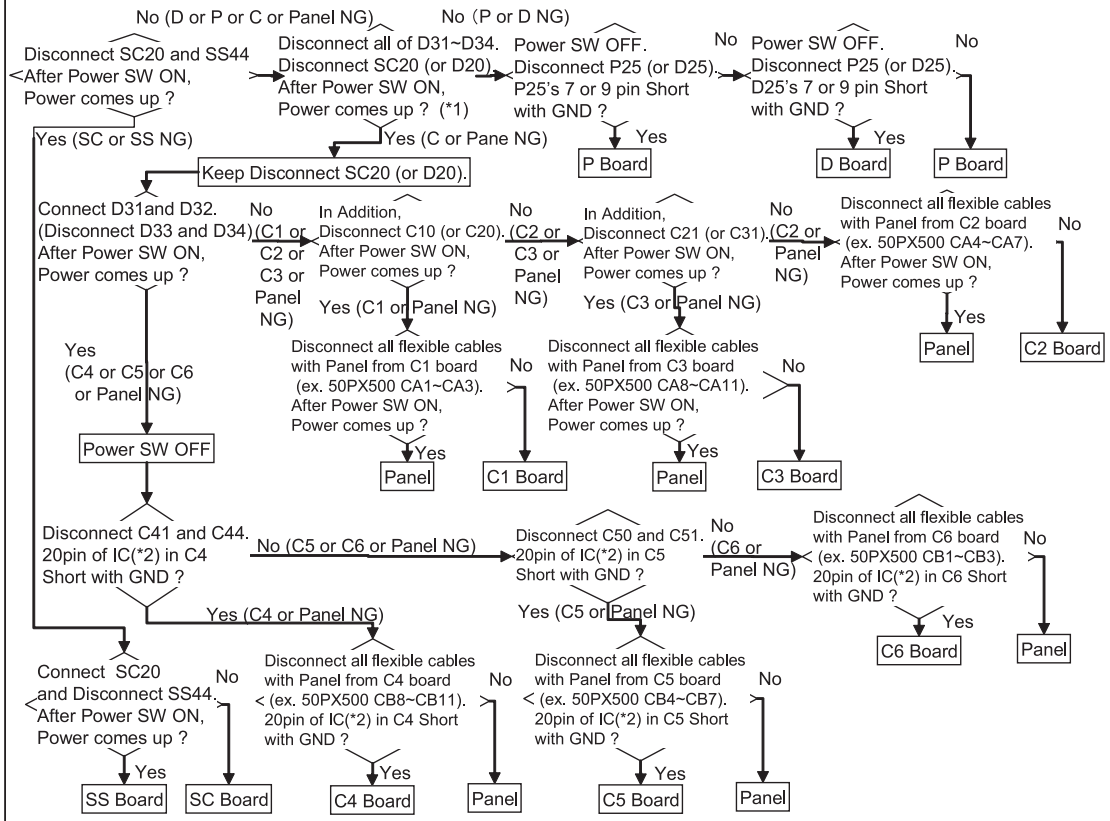
Trouble Shooting　Power LED Blink Trouble

LED 5 times blink < 50” HD (TH-50PV500E,B) >

◆ Trouble Mode and Defective Board

Trouble Mode	Defective Board
P5V SOS	D, P, C, SC, SS Board, Panel (IC)

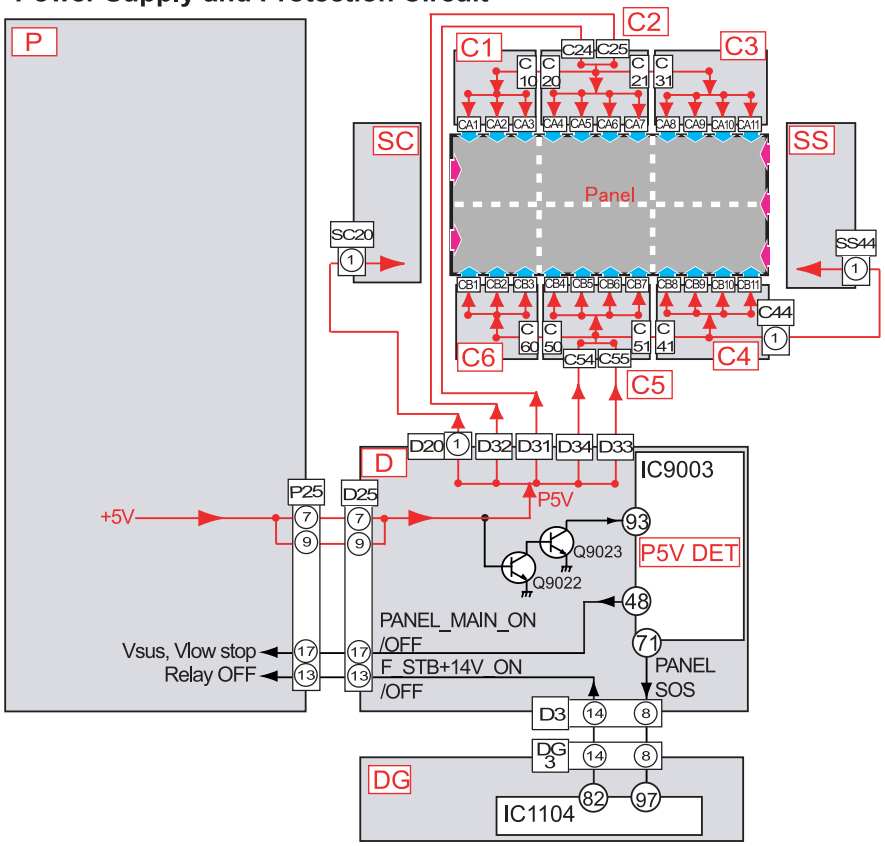
◆ How to find the defective board



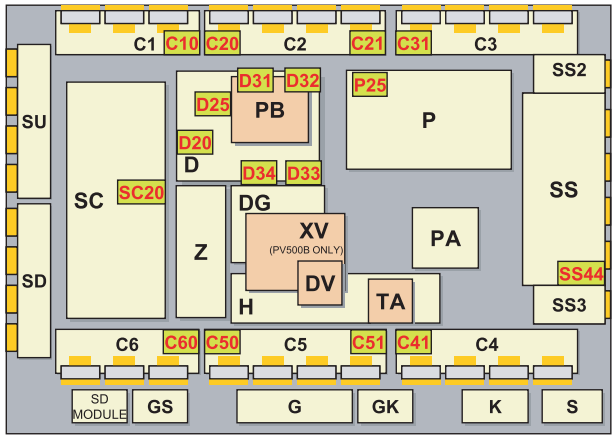
(*1)
The reason of disconnect SC20 is to prevent 6 times SOS caused by disconnect D31~D34.

(*2)Check one of the following IC.
IC in C4 board : IC7401 or IC7402 or IC7403 or IC7404 or IC7405
IC in C5 board : IC7501 or IC7502 or IC7503 or IC7504 or IC7505
IC in C6 board : IC7302 or IC7303 or IC7304 or IC7306

◆ Power Supply and Protection Circuit



◆ Check Point Location



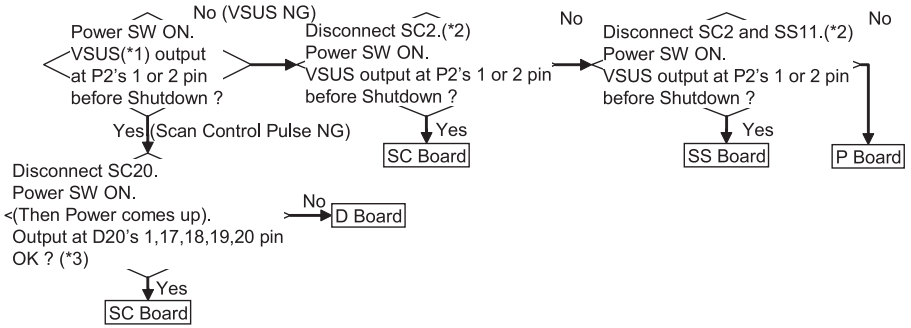
Trouble Shooting　Power LED Blink Trouble

LED 6 times blink <37"/42"> (TH-37/42PA50E, PE50B) (TH-37/42PV500E,B)

◆ Trouble Mode and Defective Board

Trouble Mode	Defective Board (Possibility)
SC Energy Recovery SOS	SC, SS, D, P Board (SC > SS, D, P)

◆ How to find the defective board

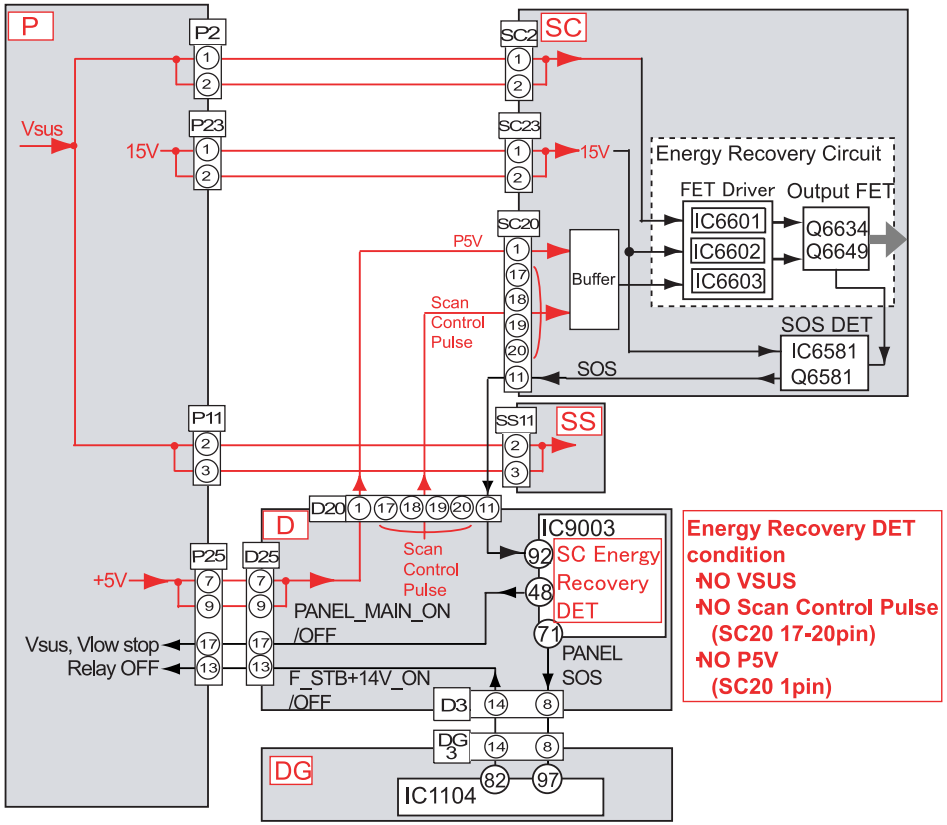


(*1) VSUS about 180V (Accurate voltage is described in Panel Label on the chassis)

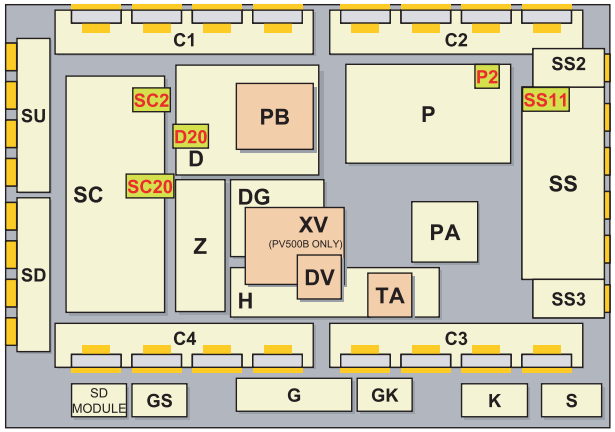
(*2) CAUTION
Before connecting SC2 or SS11 after these are disconnected, discharge is necessary to prevent potential shock caused by VSUS.

(*3)Check
Pin No. : Output
1 : 5V(DC)
17, 18, 19, 20 : 5V(PULSE) ---need oscilloscope

◆ Power Supply and Protection Circuit　e.g. 42PV500E,B



◆ Check Point Location　e.g. 42PV500E,B



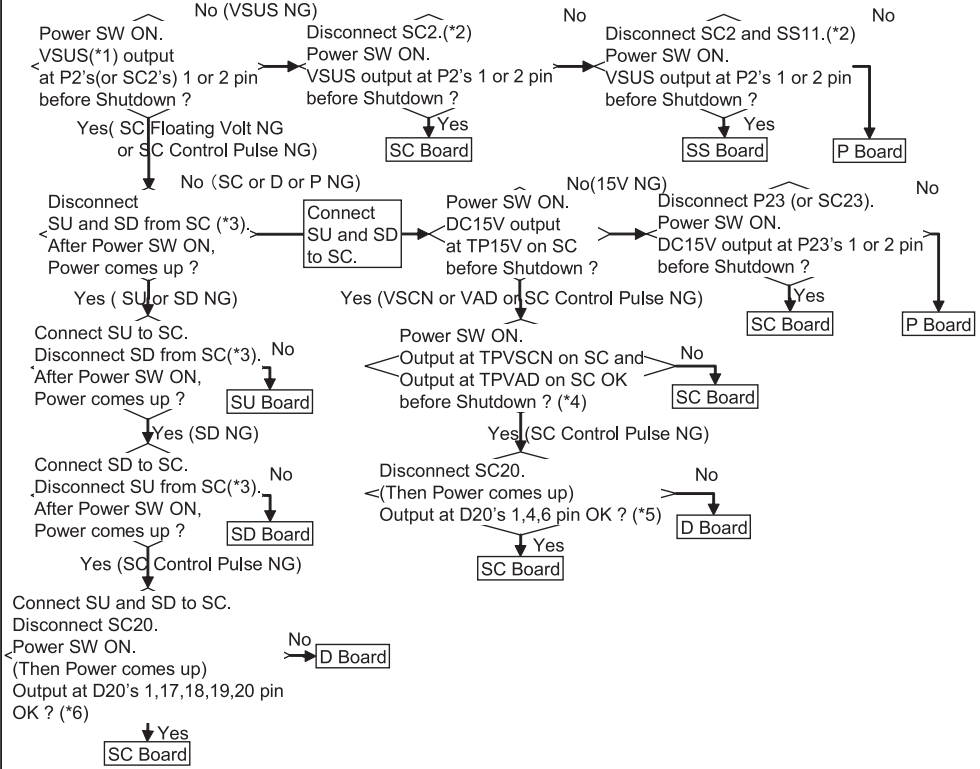
Trouble Shooting — Power LED Blink Trouble

LED 6 times blink < 50" (TH-50PV500E,B) >

◆ Trouble Mode and Defective Board

Trouble Mode	Defective Board (Possibility)
SC Floating Voltage	SC, SS, D, P Board (SC, SU, SD > SS, D, P)
SC Energy Recovery	SC, SU, SD, D, P Board

◆ How to find the defective board



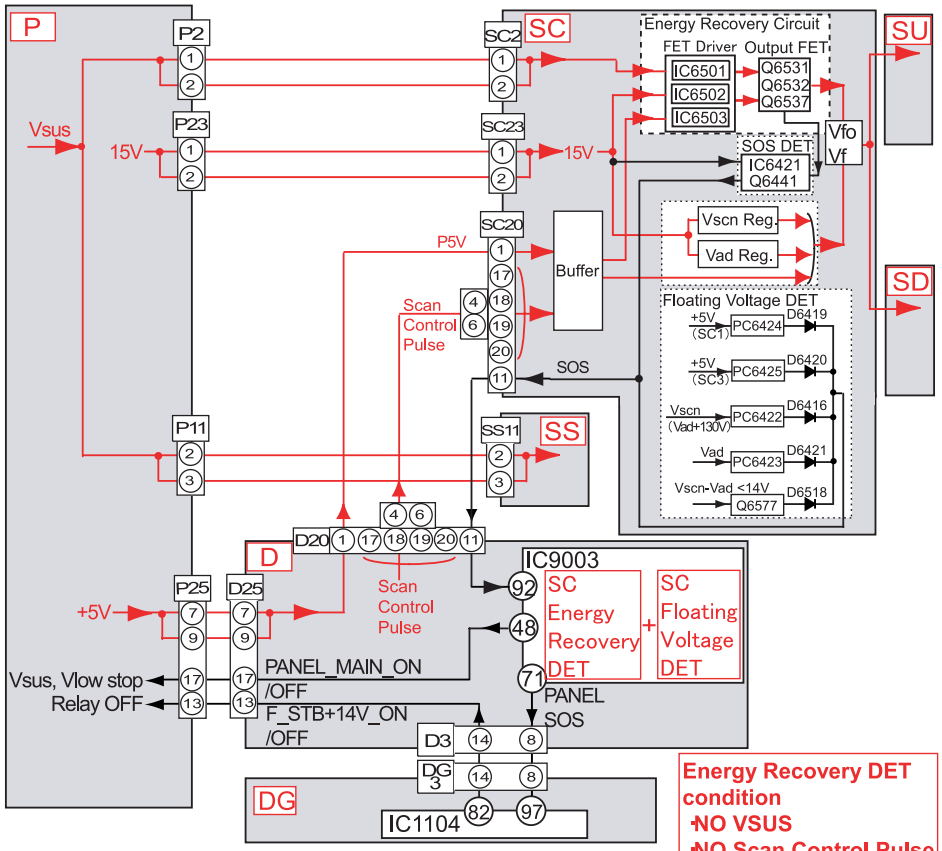
(*1) VSUS about 180V (Accurate voltage is described in Panel Label on the chassis)

(*2) CAUTION
Before connecting SC2 or SS11 after these are disconnected, discharge is necessary to prevent potential shock caused by VSUS.

(*3) Be careful that disconnected SU or SD board doesn't touch SC board.

(*4)Check	(*5)Check	(*6)Check
Test Point. : Output	Pin No. : Output	Pin No. : Output
TPVSCN : about 30~40V	1 : 5V(DC)	1 : 5V(DC)
TPVAD : about △90V	4, 6 : 5V(PULSE) ---need oscilloscope	17, 18, 19, 20 : 5V(PULSE)---need oscilloscope

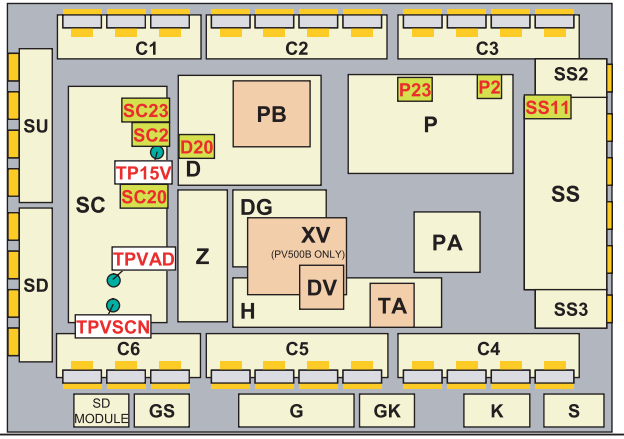
◆ Power Supply and Protection Circuit



Energy Recovery DET condition
- NO VSUS
- NO Scan Control Pulse (SC20 17-20pin)
- NO P5V (SC20 1pin)

Floating Voltage DET condition
- NO 15V
- NO Scan Control Pulse (SC20 4-6pin)
- NO P5V (SC20 1pin)

◆ Check Point Location



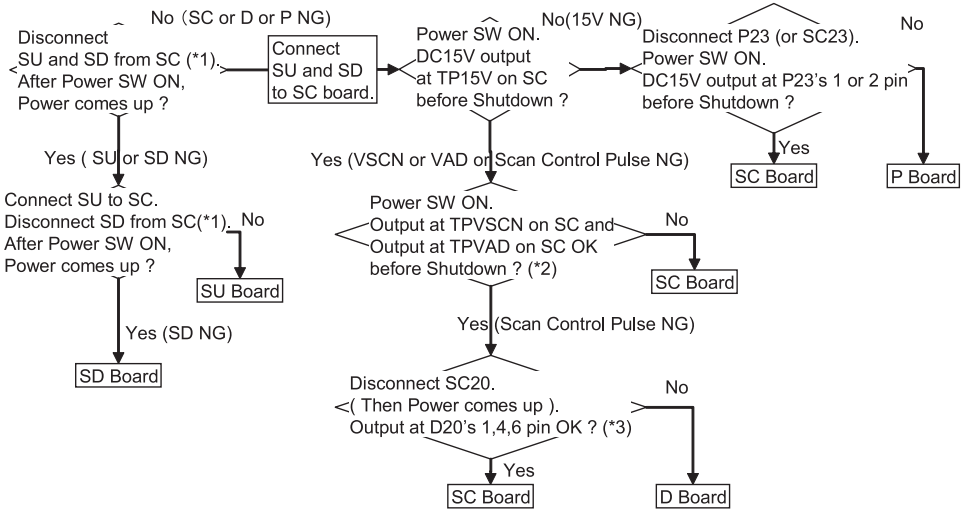
Trouble Shooting — Power LED Blink Trouble

LED 7 times blink <37"/42"> (TH-37/42PA50E, PE50B) (TH-37/42PV500E,B)

◆ Trouble Mode and Defective Board

Trouble Mode	Defective Board (Possibility)
SC floating voltage SOS	SC, SU, SD, D, P Board (SC, SU, SD > D, P)

◆ How to find the defective board

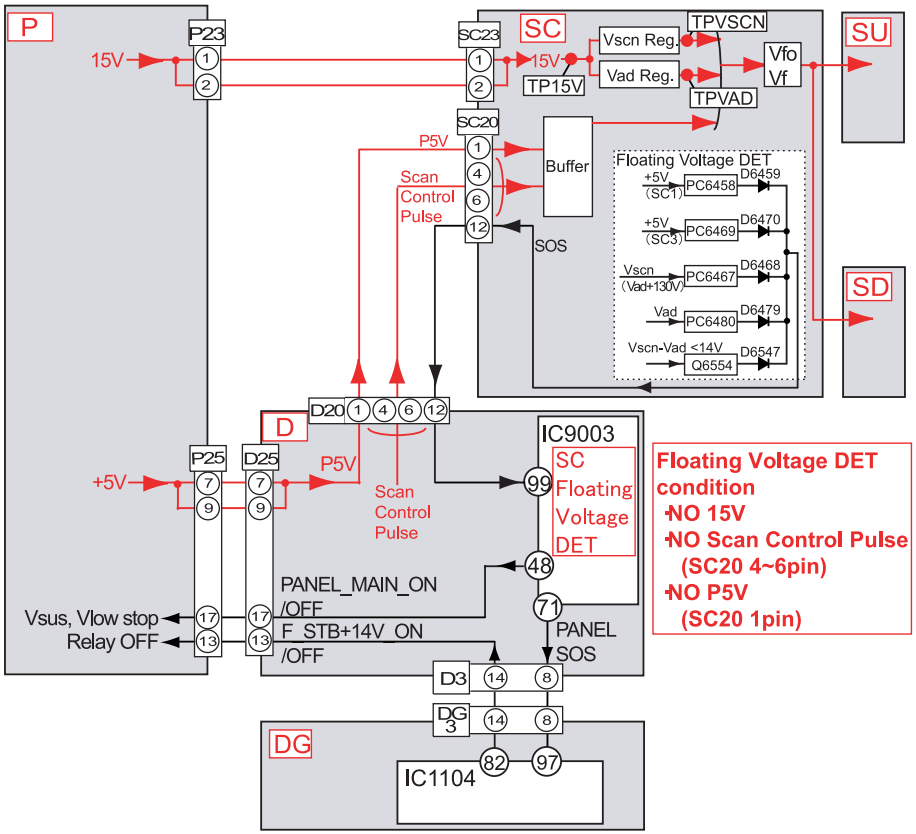


(*1) Be careful that disconnected SU or SD board doesn't touch SC board.

(*2)Check
Test Point. : Output
TPVSCN : about 30~40V
TPVAD : about △90V

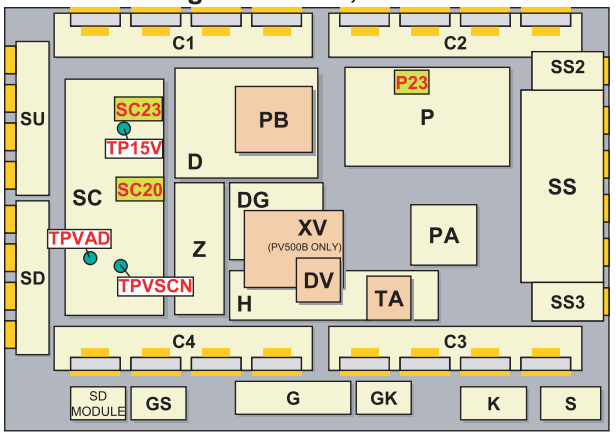
(*3)Check
Pin No. : Output
1 : 5V(DC)
4, 6 : 5V(PULSE)---need oscilloscope

◆ Power Supply and Protection Circuit e.g. 42PV500E,B



Floating Voltage DET condition
- NO 15V
- NO Scan Control Pulse (SC20 4~6pin)
- NO P5V (SC20 1pin)

◆ Check Point Location e.g. 42PV500E,B



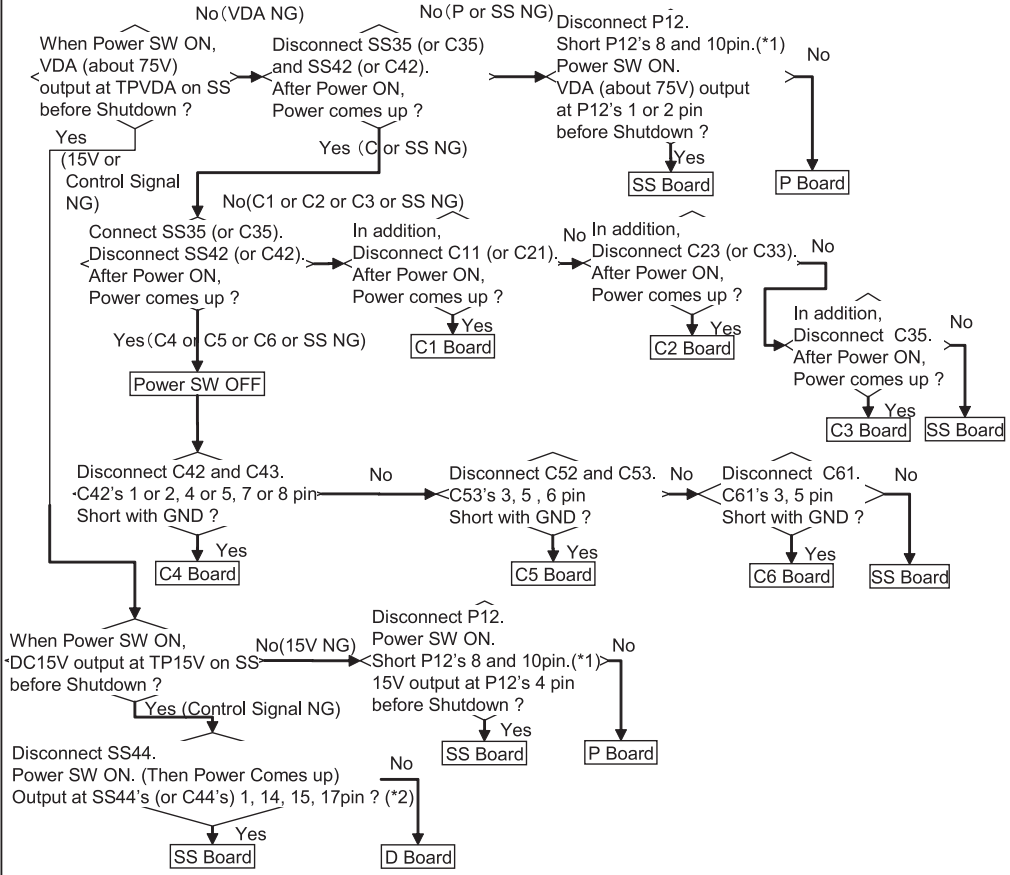
Trouble Shooting Power LED Blink Trouble

LED 7 times blink < 50" (TH-50PV500E,B) >

◆ Trouble Mode and Defective Board

Trouble Mode	Defective Board
SS Data Energy recovery	SS, D, C, P

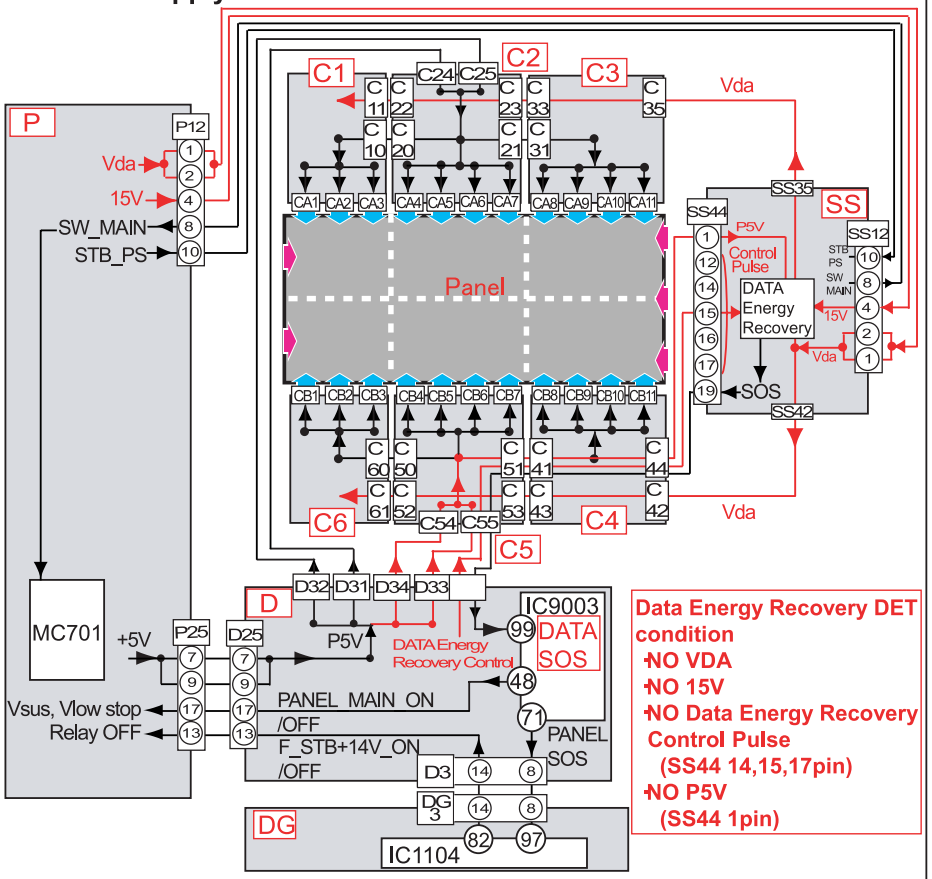
◆ How to find the defective board



(*1) The reason of short is that SW_MAIN signal is low (STB_PS) and MC701 outputs Relay ON signal for power supply.

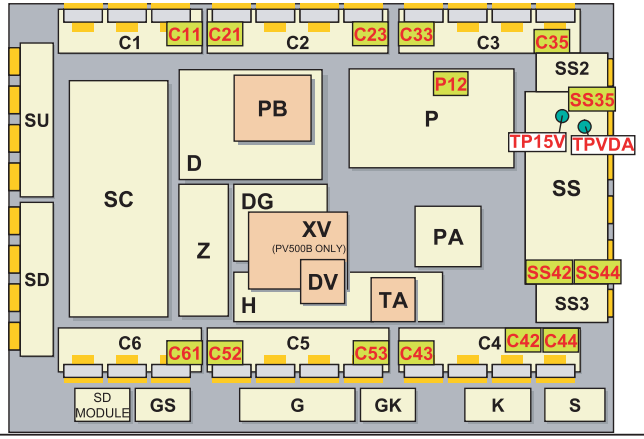
(*2) Check
Pin NO : Output
1 : 5V(DC)
14, 15, 17 : 5V(PULSE)---need oscilloscope

◆ Power Supply and Protection Circuit



Data Energy Recovery DET condition
- NO VDA
- NO 15V
- NO Data Energy Recovery Control Pulse (SS44 14,15,17pin)
- NO P5V (SS44 1pin)

◆ Check Point Location



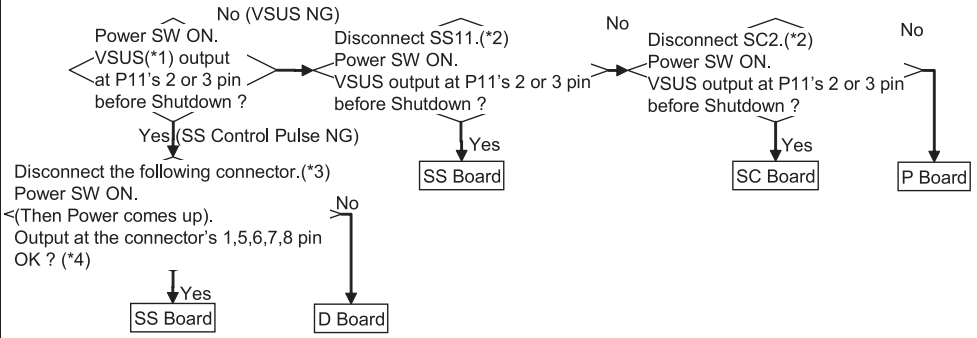
Trouble Shooting | Power LED Blink Trouble

LED 8 times blink

◆ Trouble Mode and Defective Board

Trouble Mode	Defective Board (Possibility)
SS Energy recovery	SS, SC, D, P Board (SS > SC, D, P)

◆ How to find the defective board



(*1) VSUS about 180V (Accurate voltage is described in Panel Label on the chassis)

(*2) CAUTION
Before connecting SC2 or SS11 after these are disconnected, discharge is necessary to prevent potential shock caused by VSUS.

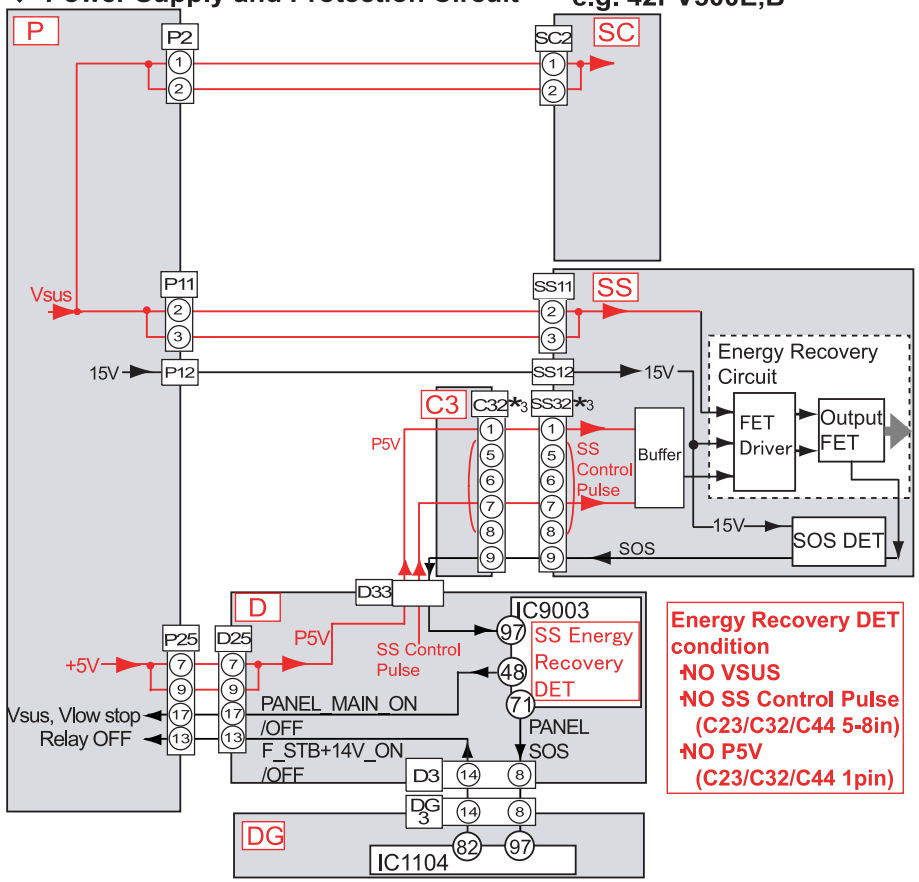
(*3) Connector

Model	Connector
37/42PA50E, PE50B(SD)	SS23-C23
37/42PV500E,B(HD37,42)	SS32-C32
50PV500E,B(HD50)	SS44-C44

(*4) Output

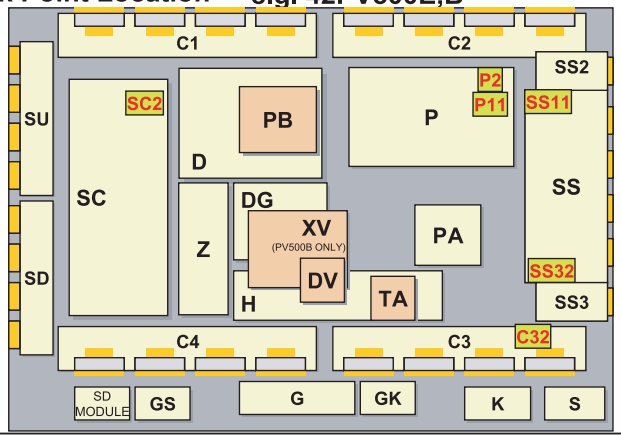
Pin No.	Output
1	5V(DC)
5, 6, 7, 8	5V(PULSE)---need oscilloscope

◆ Power Supply and Protection Circuit e.g. 42PV500E,B



Energy Recovery DET condition
- NO VSUS
- NO SS Control Pulse (C23/C32/C44 5-8in)
- NO P5V (C23/C32/C44 1pin)

◆ Check Point Location e.g. 42PV500E,B



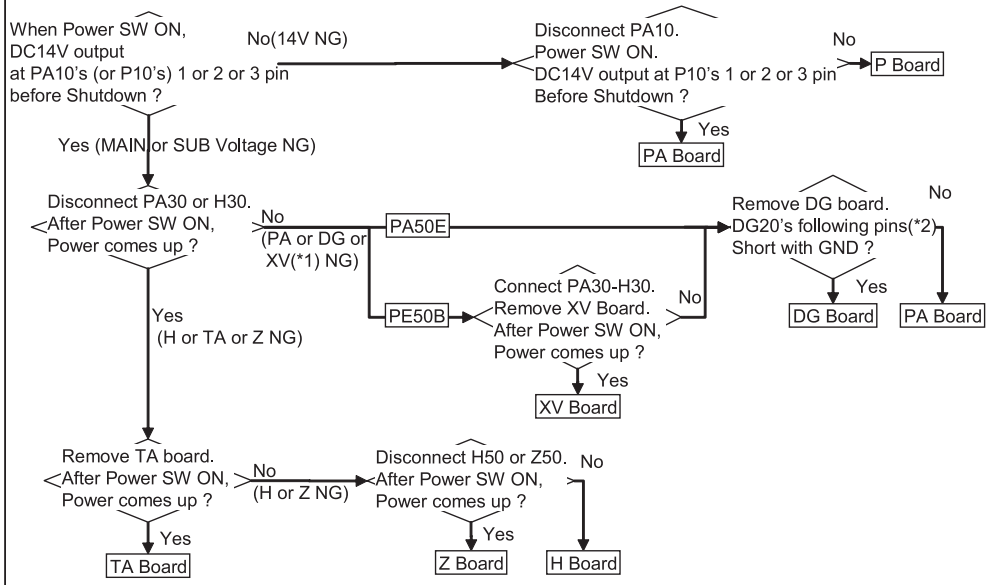
Trouble Shooting — Power LED Blink Trouble

LED 10 times blink <50 series (TH-37/42PA50E, PE50B)>

◆ Trouble Mode and Defective Board

Trouble Mode	Defective Board (Possibility)
Tuner Power SOS	PA, P, other Boards (PA, P > other Boards)

◆ How to find the defective board

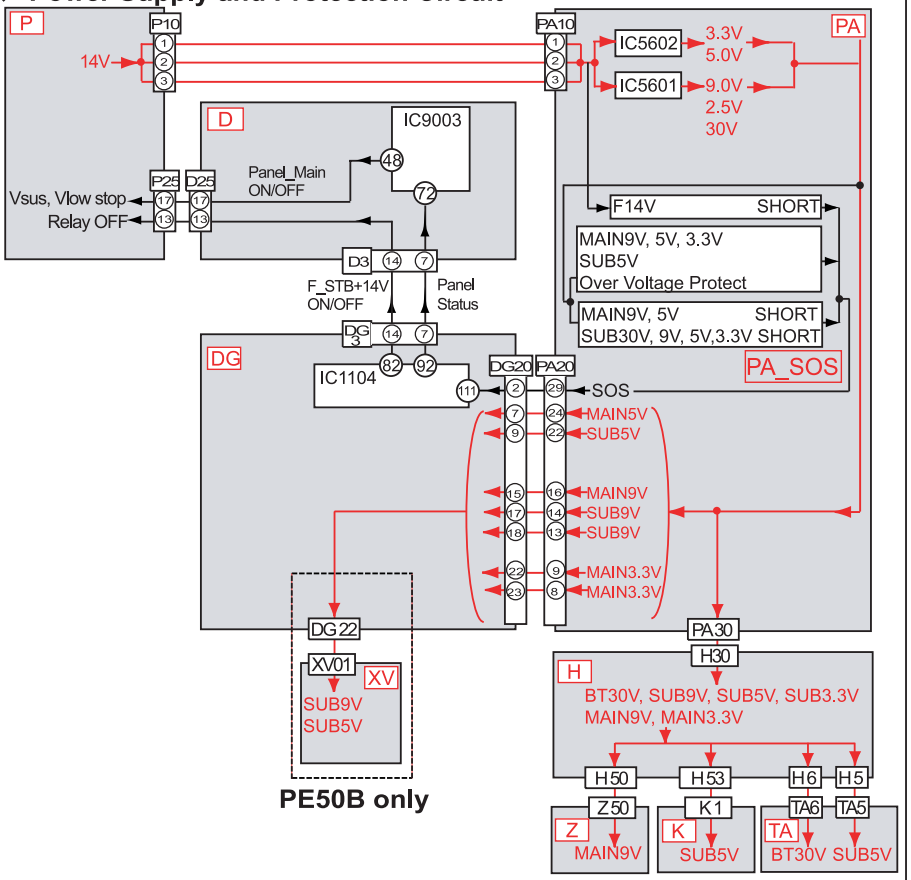


(*1) XV board : PE50B only

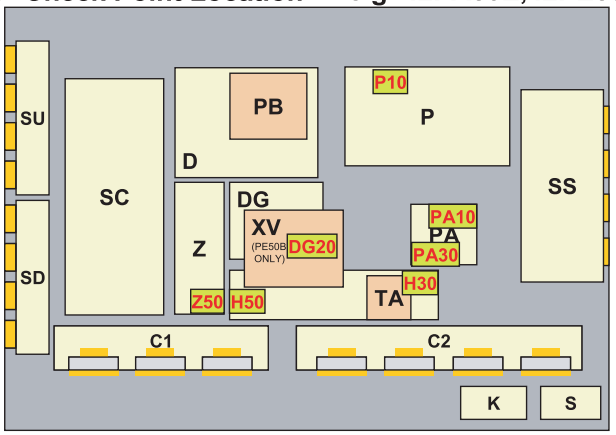
(*2) Check DG20's Pin Number

Pin No.	Voltage (Normal Condition)
7	MAIN5V
9	SUB5V
15	MAIN9V
17	SUB9V
18	SUB9V
22	MAIN3.3V
23	MAIN3.3V

◆ Power Supply and Protection Circuit



◆ Check Point Location e.g. 42PA50E,42PE50B



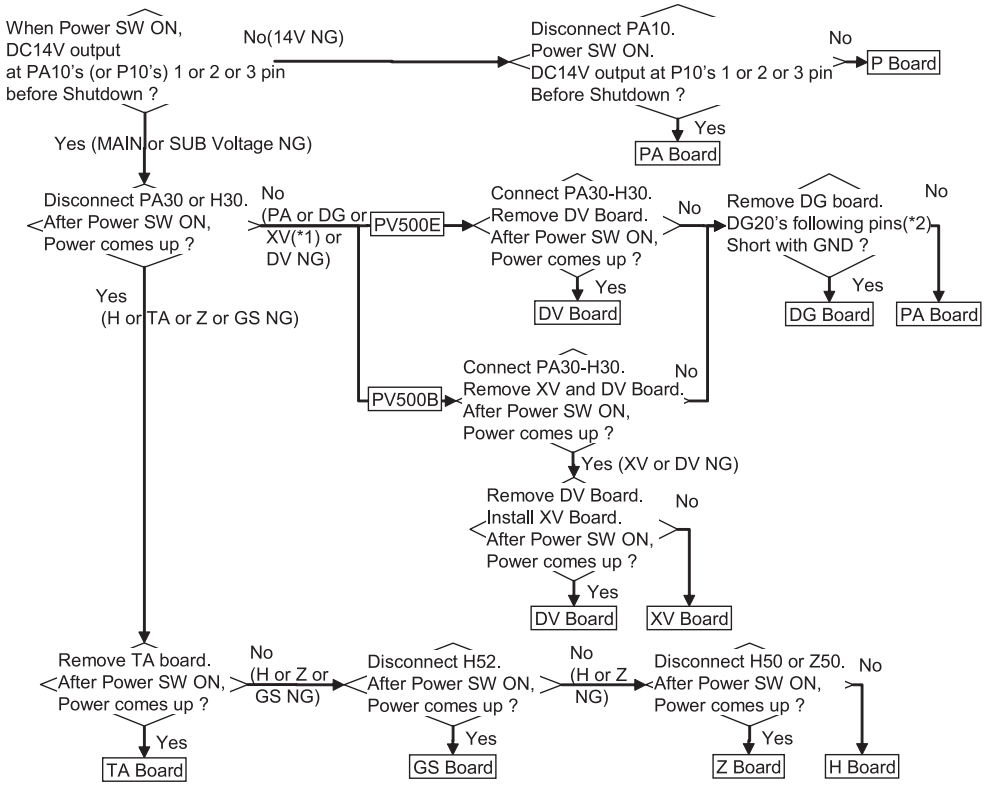
Trouble Shooting — Power LED Blink Trouble

LED 10 times blink < 500 series (TH-37/42/50PV500E,B) >

◆ Trouble Mode and Defective Board

Trouble Mode	Defective Board (Possibility)
Tuner Power SOS	PA, P, other Boards (PA, P > other Boards)

◆ How to find the defective board

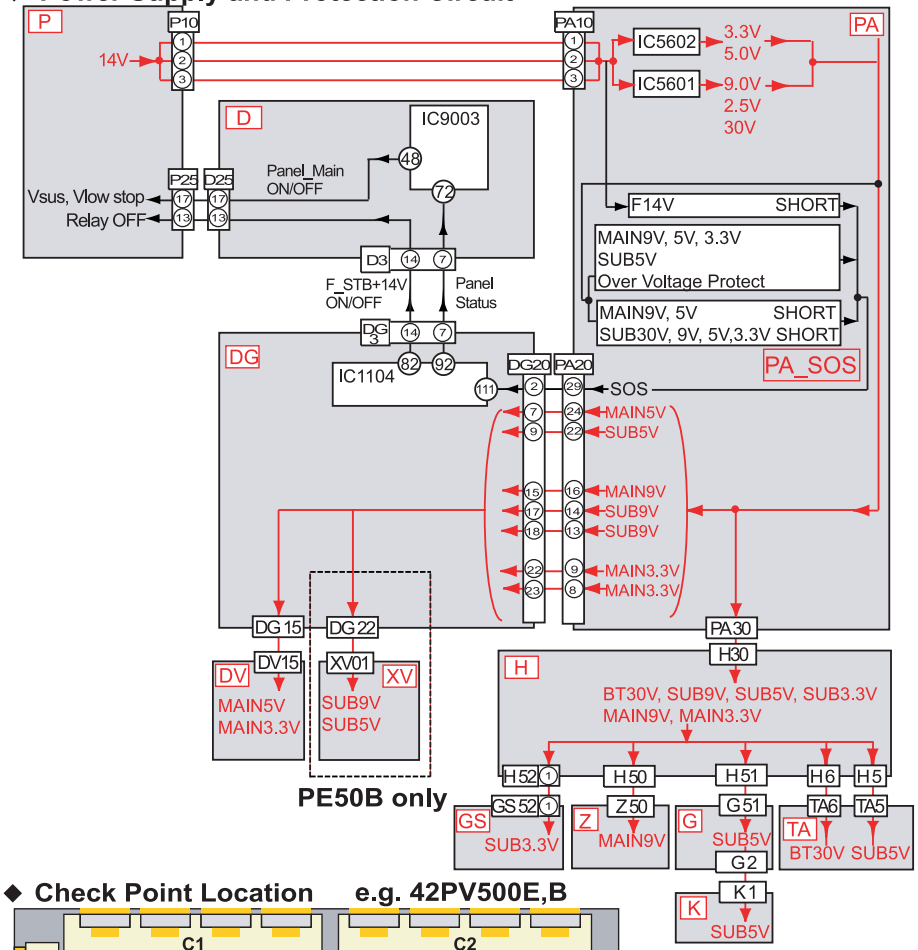


(*1) XV board : PE500V only

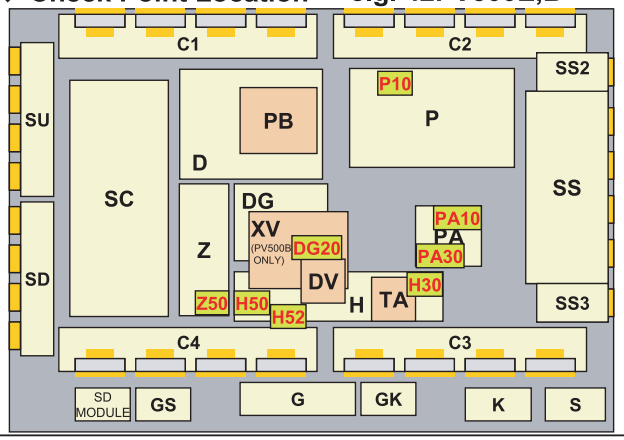
(*2) Check DG20's Pin Number

Pin No.	Voltage (Normal Condition)
7	MAIN5V
9	SUB5V
15	MAIN9V
17	SUB9V
18	SUB9V
22	MAIN3.3V
23	MAIN3.3V

◆ Power Supply and Protection Circuit



◆ Check Point Location e.g. 42PV500E,B



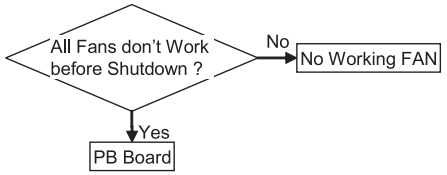
Trouble Shooting | Power LED Blink Trouble

LED 11 times blink

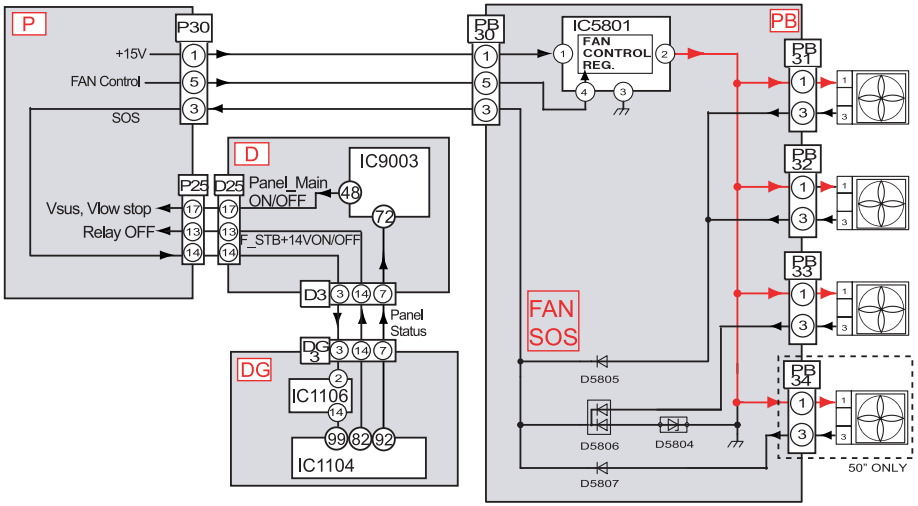
◆ Trouble Mode and Defective Board

Trouble Mode	Defective Board
Fan SOS	PB Board, FAN

◆ How to find the defective board



◆ Power Supply and Protection Circuit

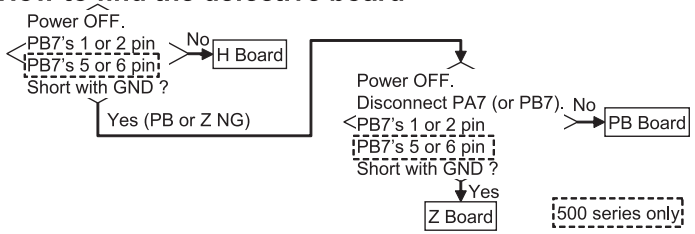


LED 12 times blink

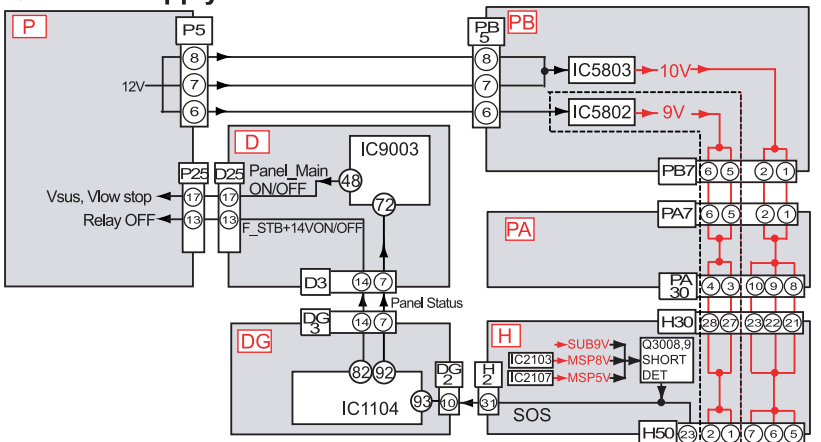
◆ Trouble Mode and Defective Board

Trouble Mode	Defective Board
Sound SOS	Z, PB, H Board

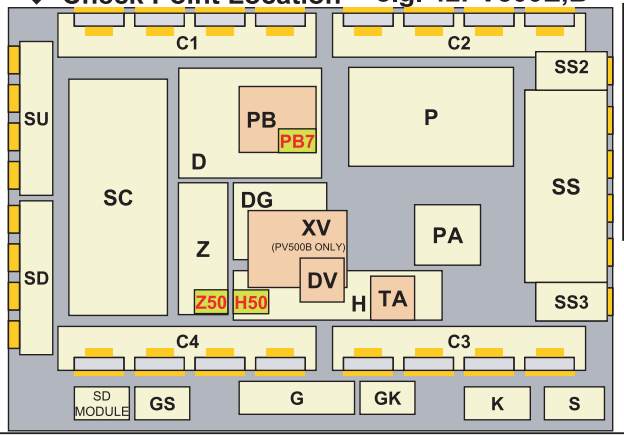
◆ How to find the defective board



◆ Power Supply and Protection Circuit



◆ Check Point Location e.g. 42PV500E,B




Audio-Visual Chain
SD-DVD-DTV
Professional AVC
Mobile AVC
AVC Server
Flat Display
SD-DVD-DTV
Key Devices i Patents
Panasonic
ideas for life